| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Fact Family |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Dice
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:


## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).
- Tell them how they will know that the game is over.


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.

When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Fact Family

A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the numbers 9,4 , and 36 have a particular relationship in multiplication and division. This family has four members:
$9 \times 4=36$
$4 \times 9=36$
$36 \div 4=9$
$36 \div 9=4$

The numbers 9, 4 and 13 have a particular relationship in addition and subtraction.

$$
\begin{aligned}
& 9+4=13 \\
& 4+9=13 \\
& 13-4=- \\
& 13-9=4
\end{aligned}
$$

Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families

## Student Practice

General guidelines for students playing games follow

## Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: odd

Description: Numbers that cannot be divided evenly by 2. Examples: 3, 5, 7, 9, 31, 33, 35
Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle,

| sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word. |  | multiple students acting out an equation). |
| :---: | :---: | :---: |
| Vocabulary Notebook Sample: |  | Vocabulary Notebooks can be made from $1 / 2$ of a composition book. |
| New Word | My Description |  |
| odd | Numbers that are not even | It is important to review academic math vocabulary often |
| Personal Connection | Drawing | throughout the day. |
| Are these numbers odd or even? | 3,5,7, and 9 are odd numbers | Complete the Vocabulary notebook for each word. |
|  | $3,5,7$ and 9 are odd numbers | When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). <br> Vocabulary Notebooks can be made from $1 / 2$ of a composition book. |
|  |  |  |
|  |  |  |
| Activity <br> Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center. |  | Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center. |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |


|  | Closing |
| :---: | :---: |
| Say: | Review |
| $\bullet$ |  |
| • Please recap what we did today. |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Addition or Multiplication War |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Cards, one deck for every 2 students
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
If you have 19 chocolate chip cookies and 13 Oreos, how many cookies do you have altogether?

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Tell them how they will know that the game is over.
- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Addition War or Multiplication War

1. Divide students into pairs. Give each pair a deck of cards have them remove face cards and jokers and place in the box.
2. Shuffle the deck and divide the cards evenly between the two players.
3. On go, the players turn over the cards at the same time.
4. Students add (or multiply) the 2 numbers that have been turned up.
5. First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer.
6. At the end of round, students may reshuffle the pile of cards that they have.
7. Play can continue until one player has all cards or time has called.

## Student Practice

General guidelines for students playing games follow
Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.
Word for Today: math
Description: Math is the word we use that is short for mathematics. Math is the study of numbers, patterns, space, and change. In math we learn about operations, geometry, data and statistics, algebra, and mathematical reasoning.
Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

| New Word | My Description <br> A term that is short for mathematics and is about numbers and patterns | It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. <br> When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). <br> Vocabulary Notebooks can be made from $1 / 2$ of a composition book. <br> Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center. |
| :---: | :---: | :---: |
| Personal Connection <br> Math is one of my favorite subjects in school. | Drawing |  |
|  |  |  |
| Activity <br> Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center. |  |  |


|  | Closing |
| :---: | :---: |
| Say: | Review |
| $\bullet$ |  |
| $\bullet$ |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.

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2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Foreheader |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Cards, one deck for every 3 students
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
If you have 32 marbles and you lose 12, how many marbles do you have left?

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).
- Tell them how they will know that the game is over.


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Foreheader

1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.
2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest.
3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead.
4. The referee multiplies (or adds) the two numbers together and states the answer.
5. Each player looks at the other person's exposed number and names his/her own number
6. Person who wins (accuracy and time), collects both cards.
7. Play continues until all cards are gone.

- Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee.


## Student Practice

General guidelines for students playing games follow

## Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: operations

Description: The word operation refers to a mathematical process. The four most common are addition, subtraction, multiplication, and division that are represented with these symbols:,,$+- X$, and $\div$.
Complete the journal entry in your Vocabulary Notebook. In space 1, write the

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting
word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word.

Vocabulary Notebook Sample:

| New Word | My Description <br> operations <br> There 4 basic operations: addition, <br> subtraction, multiplication and division |
| :--- | :--- |
| Personal Connection <br> How many of the operations can you <br> complete? | Drawing |

## Activity

Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center.
out an equation). Vocabulary Notebooks can be made from $1 / 2$ of a composition book. It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.

When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).

Vocabulary Notebooks can be made from $1 / 2$ of a composition book.
Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

|  | Closing |
| :---: | :---: |
| Say: | Review |
| $\bullet$ |  |
| • Please recap what we did today. |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

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Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Addition or Multiplication Ladder |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Dice
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
What do these symbols mean: < and >. Give an example.

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).
- Tell them how they will know that the game is over.


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Multiplication (or Addition) Ladder

1. Give each student a white board (include marker or crayola)
2. Student should draw a ladder like the one below

3. 3. Have student roll 2 dice, total the pips and then multiply (or add) that number times each of the numbers in the ladder, writing the total to the right of the number

## Student Practice

General guidelines for students playing games follow
Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: subtraction

Description: Reducing a total by a specific amount and then finding the difference between what you started with and what you have after removing some items. Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle,

| sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word. |  | multiple students acting out an equation). |
| :---: | :---: | :---: |
| Vocabulary Notebook Sample: |  | Vocabulary Notebooks can be made from $1 / 2$ of a composition book. |
| New Word | My Description |  |
| subtraction | Reducing a total number and finding the difference | It is important to review academic math vocabulary often throughout the day. |
| Personal Connection <br> Do you know how to do subtraction problems? | Drawing | Complete the Vocabulary notebook for each word. |
|  |  | When possible, have students experience the word (Ex. 4 students |
|  |  | creating a right angle, multiple students acting out an equation). |
|  |  | Vocabulary Notebooks can be made from $1 / 2$ of a composition book. |
| Activity |  | Focus on having young |
|  |  | people "compete" in pairs |
| Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center. |  | or small groups. Once a |
|  |  | game is mastered you can utilize it in the "When |
|  |  | Homework Is Complete" |
|  |  |  |


|  | Closing |
| :---: | :---: |
| Say: | Review |
| $\bullet$ |  |
| • Please recap what we did today. |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Spokes on a Wheel |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Dice
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
If there are 5 rows and each row has 5 chairs in it, how many chairs are there?

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).
- Tell them how they will know that the game is over.


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.

When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Spokes on a Wheel

1. Divide students into pairs
2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire)
3. Have students choose to put a 6,7 or 8 in the center circle
4. Student rolls two dice and adds the pips (dots)
5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$ or $6+8=14$ )

|  |  |
| :---: | :---: |
| Student Practice <br> General guidelines for students playing games follow <br> Step 4: Open Play <br> - Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups) <br> - Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play. <br> - Check for understanding by asking students to tell another student "how" to play the game from what they experienced. |  |

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: addition

Description: Combining two or more groups of things (usually representing by numerals) and finding a total.
Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word.

## Vocabulary Notebook Sample:

New Word

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can be made from $1 / 2$ of a composition book. It is important to review

| addition  <br> Dersonal Connection you know how to do addition <br> problems? Drawing <br> things into a whole  |
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#### Abstract

academic math vocabulary often throughout the day.


 Complete the Vocabulary notebook for each word.When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

## Activity

Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

|  |  |
| :---: | :--- |
|  | Closing |
| Say: | Review |
| $\bullet$ |  |
| • Please recap what we did today. |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do.

Consult 4 Kids Lesson Plans
(Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
|  | Spot and Dots |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Cards, one deck for every 2 students
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
If you have $\mathbf{1 1}$ rows and each row has $\mathbf{6}$ chairs in it, how many chairs do you have in all?

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Tell them how they will know that the game is over.
- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

Fact Practice - Spots and Dots
There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

1. Players sit across from each other.
2. Dominoes are between them, face (or spots) down.
3. Each student draws a domino and writes the multiplication (or addition) problem on their white board, multiplying (or adding) the numbers represented by the spots

| Example: Domino drawn is |  |  |
| :---: | :---: | :---: |
|  | $\bullet \bullet \bullet$ |  |
| Multiplication: $2 \times 3=6$ <br> Addition: $2+3=5$ |  |  |
| Student Practice <br> General guidelines for students playing games follow <br> Step 4: Open Play <br> - Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups) <br> - Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play. <br> - Check for understanding by asking students to tell another student "how" to play the game from what they experienced. <br> Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made. <br> Step 5: Play <br> - Have students play the game.' <br> - Circulate and answer questions as needed. <br> - Debrief the game at the end asking students: <br> o What skill did you practice? <br> o What did you learn? <br> o What about the game was enjoyable? What makes you say that? <br> o How would you have taught the game differently? |  |  |
| Each lesso The word vocabular follow this Word for Descriptio Complete | also hav review in an A n. We pentag at-5 sid urnal entry | It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the |

word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word.

Vocabulary Notebook Sample:

| New Word | My Description |
| :--- | :--- |
| pentagon | A 5 sided figure that is flat |


|  |
| :--- |
|  |

## Activity

Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center.
word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book. It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.
Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

|  | Closing |
| :--- | :--- |
|  |  |
| Say: | Review |
| $\bullet$ |  |
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## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Double 9 Dominoes


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Consult 4 Kids Lesson Plans

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| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Draw |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Cards, one deck for every 2 students
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment, you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
Joe has 8 coins. Judy has 9 coins. How many coins do they have together?

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).
- Tell them how they will know that the game is over.


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Draw!

1. Divide students into pairs and give each pair a deck of cards.
2. Remove the face cards and jokers from the deck of cards.
3. Shuffle the deck.
4. Decide who will go first.
5. First player draws two cards.
6. Student multiplies (adds) the cards.
7. Student writes his/her problem on the white board, writing a complete
number sentence.
8. Students take turns drawing and creating problems.

## Student Practice

General guidelines for students playing games follow

## Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers). Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: circle

Description: A circle is a 2-dimensional shape made by drawing a curve that is always the same distance from the center. A circle is round.
Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a

| New Word | My Description <br> A closed figure that is made with a single arching line | composition book. <br> It is important to review <br> academic math <br> vocabulary often <br> throughout the day. |
| :---: | :---: | :---: |
| Personal Connection <br> That clock is a circle. | Drawing | Complete the Vocabulary notebook for each word. <br> When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). <br> Vocabulary Notebooks can be made from $1 / 2$ of a composition book. |
| Each day there will also be a mat week we will not do an activity $h$ Math Fact Games. This activity can | vity <br> activity that will occur in this space. This you are learning how to play each of the ed to the Homework Center. | Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center. |


|  |  |
| :---: | :---: |
|  | Closing |
| Say: | Review |
| $\bullet$ |  |
| $\bullet$ |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Target |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Cards, one deck for every 2 students
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
How much money do you have if you have 3 dimes, 4 nickels, 8 pennies, and one quarter?

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Tell them how they will know that the game is over.
- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

Target

1. Divide students into trios.
2. Each trio needs a deck of cards without face cards and jokers.
3. Place the cards face up in a TicTac Toe Grid.
4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1).
5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide.
6. Each card may be used only one time in the equation.
7. As the cards are being picked up, the player must say the equation aloudfor example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2.
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck.
9. Player with the most cards at the end of the game win.

## Student Practice

General guidelines for students playing games follow

## Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: triangle

Description: A shape that has three sides and three angles.
Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting

| picture of the word.  <br> Vocabulary Notebook Sample: My Description <br> New Word <br> triangle A three-sided flat shape |
| :--- |
| Personal Connection <br> Have you seen a triangle? |

out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book. It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).

Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

## Activity

Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

|  | Closing |
| :---: | :---: |
| Say: | Review |
| $\bullet$ |  |
| $\bullet$ |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

Consult 4 Kids Lesson Plans

Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Number Hunt or Product Hunt |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

12-sided dice (1 pair for every 2 students)
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
Think of the following shapes: $\triangle \square \square \square$
Organize them in some way and then share that organization with a partner.

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.

When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Tell them how they will know that the game is over.
- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Number Hunt (Grades 2-3-Game Board Attached)

1. Divide students into pairs.
2. Each pair needs a Number Hunt sheet (attached to this lesson plans).
3. Player rolls two, 12-sided dice.
4. Player adds or subtracts the two numbers.
5. If the number is not yet covered, then player may cover the number.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

## Product Hunt (Grades 3-5-Game Board Attached)

1. Divide students into pairs.
2. Each pair needs a Product Hunt sheet (attached to this lesson plans).
3. Player rolls two, 12 -sided dice.
4. Player multiplies the two numbers.
5. If the product is not yet covered, then player may cover the product.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

## Student Practice

General guidelines for students playing games follow

## Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?


## Math Vocabulary

Each lesson will also have a vocabulary word that is appropriate for the grade level.
The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: square

Description: A shape that has four sides that are all equal in length.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have

Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word.

## Vocabulary Notebook Sample:

| New Wordsquare | My Description <br> A four-sided shape with 4 equal sides <br> and 4 equal right angles |
| :--- | :--- |
| Personal Connection <br> That clock is in the shape of a square. | Drawing |

## Activity

Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center.
students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).

Vocabulary Notebooks can be made from $1 / 2$ of a composition book. It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

|  |  |
| :---: | :---: |
|  | Closing |
| Say: | Review |
| - Please recap what we did today. |  |
| • Did we achieve our objectives? |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

Number Hunt

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |

Number Hunt

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $2^{\text {nd }}-5^{\text {th }}$ Grades |
| Lesson Title: | Bump It Up and Add A Zero |
| Focus: | Learning Each Math Lesson Segment |

## Materials:

Dice, cards, game boards
White boards, paper and pencil

| Opening |
| :--- |
| State the objective |
| Today we are going to practice the different aspects of the math lesson plan. |
| Gain prior knowledge by asking students the following questions |
| What are some of the games that you know how to play? |
| What are some of the math vocabulary words that you know? |
| What do you think is meant by "Problem of the Day"? |

## Content (the "Meat")

## Problem of the Day

In this segment, you will have a problem for students to complete. The problems will vary and will be both review and in line with the lesson. Write the problem on chart paper. Let youth work the problem on a white board either alone or with a partner. Following is a sample problem:
I have $\mathbf{\$ 1 . 0 0}$. I spend $\$ .68$. How much do I have left?

## Math Facts

The Fact Practice activity will be different each day. During Group 1 Lessons the youth will be taught 10 different ways to practice math facts in fun and engaging ways. You may use dice, dominoes, cards, white board, or other items to practice the math facts that are appropriate for the grade level students are in. In order for youth to practice effectively, you will need to teach each game following the protocol below.

## Step 1: Basic Information

- Tell the students the name of the game.
- Tell them the skill that they will be practicing.
- Tell them the materials they will need to play the game.
- Tell them how many people may play the game at one time.
- Tell them if the game is cooperative (all students working together to defeat the game) or competitive (each student hopes to defeat the other players).
- Tell them how they will know that the game is over.


## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

- Remind them of how to choose who will be first.
- Remind them at the end of the game that they will need to do to clean-up.


## Step 2: Demonstration

- Talk the students through the game.
- Give the rules (it is best if they can see these).
- Give a demonstration or a "for example"
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Step 3: Model

- Ask for 2-3 student volunteers to play a "teaching game" so the remainder of the class can see the game played from beginning to end.
- Ask other students to make a circle around the volunteers so they can see how the game is played.
- Go through the game step by step having the volunteers actually make the plays.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- After playing the game for several minutes, praise the first volunteers and ask for 2-3 more.
- Replay the game with the new volunteers, providing less direction but being very responsive if the players are stuck or playing the game incorrectly.
- Ask players to explain what they were thinking when they made a particular move.
- Ask onlookers to make observations or ask questions.
- Check for understanding by asking students to tell another student "how" to play the game from what they observed.


## Fact Practice

## Bump It Up! Add A Zero

1. Divide students into pairs
2. Give each pair a white board and a deck of cards (ask them to remove face cards, jokers, and 10s and return to the box)
3. The object of this fact practice is to sum numbers until you reach 1,000 .
4. Student draws 2 cards, adds the value of the cards together, multiplies by ten and writes the total on the sheet.
5. It is not the other person's turn to do the same
6. When play returns to the first player, the process is repeated, although this
time, the totals are added together.
7. First person to 1,000 wins.

Example: Player draws a 7 and a 4. Total is 11 . Multiply by 10 (add the zero) equals 110. Next turn, player draws a 3 and a 2 which totals 5 . Multiply by 10 and I now add 50 to 110 for a total of 160 .

## Multiples

Multiplication facts are learned by recognizing the multiples of any given number. In this practice, you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas (150 chart).

1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice)
2. Mark all multiples of the number and then pass off to the next person.

Players may mark the same number.

## Student Practice

General guidelines for students playing games follow
Step 4: Open Play

- Divide students into small groups (you might want to put a "volunteer" who played the game in each of these small groups)
- Have the students play a practice game (no winners or losers) Note: If you are playing with cards you might want to have the students display their hand of cards during Open Play.
- Check for understanding by asking students to tell another student "how" to play the game from what they experienced.

Note: This is the last "practice" for the game. The majority of students will have a full understanding of the game by this point. There will be only minor tweaks and adjustments that need to be made.

## Step 5: Play

- Have students play the game.'
- Circulate and answer questions as needed.
- Debrief the game at the end asking students:
o What skill did you practice?
o What did you learn?
o What about the game was enjoyable? What makes you say that?
o How would you have taught the game differently?

Each lesson will also have a vocabulary word that is appropriate for the grade level. The word may be reviewed more than one time. Youth need to complete the vocabulary entry in an Academic Vocabulary Notebook. The Vocabulary section will follow this pattern. We will practice working on this for the next 11 days.

## Word for Today: even

Description: Numbers that can be divided evenly by 2. Examples: 2, 8, 14, 22, 48, and 100.
Complete the journal entry in your Vocabulary Notebook. In space 1, write the word. In space 2, explain the word in your own words. In space 3 use the word in a sentence. In space 4 demonstrate your understanding of the word by drawing a picture of the word.

Vocabulary Notebook Sample:

| New Wordeven | My Description <br> Numbers that are not odd |
| :--- | :--- |
| Personal Connection | Drawing |
| Are these numbers odd or even? | $322,46,52$, and 98 are even numbers |

## Activity

Each day there will also be a mathematics activity that will occur in this space. This week we will not do an activity here since you are learning how to play each of the Math Fact Games. This activity can be added to the Homework Center.
academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.

When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.
It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

|  |  |
| :---: | :---: |
|  | Closing |
| Say: | Review |
| $\bullet$ |  |
| • Please recap what we did today. |  |

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Fact Practice—Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | How Many Do We Have? |
| Focus: | Review |

## Materials:

Post Its
Dice
Prizes (these can be time, a leadership role, opportunities to be the "teacher"

| Opening |  |
| :--- | :--- |
| Today we are going to have fun playing a game. | State the objective |


| Content (the "Meat") |
| :---: |
| Activity |
| How Many Do You Have? |

1. Divide students in groups of $3-4$.
2. On the Post-lt, each group writes a number between 5 and 70 .
3. Post the numbers in numeric order on the white board or a chart.
4. Roll 5 dice one time and one time only.
5. Teams are to use any math that they know ( $+,-, X, \div$, use of parenthesis, exponents) to make each of the numbers on the Post Its.
6. Give Teams 20-25 minutes to complete the task.
7. Team that has the most correct equations, wins the prize.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Consult 4 Kids Lesson Plans

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component; | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | 4 in a Row |
| Focus: | Math vocabulary, place value, multiples |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Hundreds Chart (1 for each pair of students, at end of plan)

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

Gain prior knowledge by asking students the following questions
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Use the numbers below to build a single 7-digit number. Write it in two ways: number form and word form. Explain how you got your answer. <br> 7 3,000 70 70,000 100 6,000,000 400,000 (Answer: 6,473,177) | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication Ladder <br> 1. Give each student a white board (include marker or crayola) <br> 2. Student should draw a ladder like the one below <br> 3. Have student roll 2 dice, total the pips and then multiply that number times each | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| of the numbers in the ladder, writing the total to the right of the number |  |
| :---: | :---: |
| Word for Today: Review the word mu Description: A number that is a multipl base number times another number. Ex all multiples of 3 <br> Have students share the Vocabulary No additions or changes. <br> Vocabulary Notebook Sample: | cabulary <br> nother number would be the product of that e: $3,6,9,12,15,18,21,24,27$, and 30 are <br> ks in pairs, discussing the word, making any |
| New Word <br> multiple | My Description <br> Numbers that are in a pattern that you get when you multiply: $3,6,9,12,15$ |
| Personal Connection <br> I can list the multiples of 4 to 40 . | $\begin{gathered} \text { Drawing } \\ 4,8,12,16,20,2428, \\ 32,36,40 \end{gathered}$ |

## Activity

## 4 in a Row

Remind students about multiples and that multiples are a base number that is multiplied by various numbers. Example: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
Demonstrate: Explain that students are going to play 4 in a Row, a game using a 100 s Chart. Students may select to use 1 or 2 dice. If they use 2 dice, then they will total the pips and use that as a single multiplier. The object of the game is to get 4 colored spaces in a row before the opponent. For each turn, the person may color in 2 multiples. For example:

| 6 | 7 | 8 | 9 |
| :---: | :---: | :---: | :---: |
| 16 | 17 | 18 | 19 |
| 26 | 27 | 28 | 29 |
| 36 | 37 | 38 | 40 |

To block the 36 , I would need to have the opportunity of multiples of $2,3,4,6,9$, or 12 . If I rolled a 4, I would say "Multiples of 4" and then say "4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44" I could color in both 36 and either 16 or 40 . I would pick the 16 because there are no multiples of 37 and I could block the four in a row diagonal.

1. Pair students and give the pair a 100 s Chart and two markers
2. Play is over when one player accomplishes 4 in a Row.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Hundreds Chart

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{4 \mathrm{~h}} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Target and Equation Writer |
| Focus: | Math vocabulary, basic operations, equations |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas |  |
| Socks |  |$\quad$ Cards


| Opening |
| :--- |
| $\quad$State the objective <br> Today we are going to practice using our math vocabulary and skills. <br> Gain prior knowledge by asking students the following questions <br> What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? <br> How can you tell that you are on the right track for solving the problem? <br> What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> A number can be written in a variety of ways. For example, the number 100 can be written 50 $+50,200 \div 2$ or $10 \times 10$. Write three different ways to show the number: $270$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. |
| Fact Practice <br> Target <br> 1. Divide students into trios <br> 2. Each trio needs a deck of cards without face cards and jokers <br> 3. Place the cards face up in a TicTac Toe Grid <br> 4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1) <br> 5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide <br> 6. Each card may be used only one time in the equation <br> 7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2. <br> 8. After one player finishes his/her turn, then the cards taken are replaced by cards from | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |

the remaining deck
9. Player with the most cards at the end of the game win

## Math Vocabulary

Word for Today: equation
Description: An equation is a number sentence that has numerals and operations that are equal on both side of the $=$ sign. Ex.: $4+2=6$ is a simple equation.
Students should complete the Vocabulary Notebook

Vocabulary Notebook Sample:

| New Word | My Description <br> equation |
| :--- | :--- |
| A number sentence to express an operation and <br> an answer |  |
| It is challenging to write and equation <br> using large numbers. | Drawing |

## Activity

Equation Writer

Explain to students that they are going to have an opportunity to write 4 equations-one for each operation: addition, subtraction, multiplication, and division.
Demonstrate how students will use cards to randomly demonstrate numbers. Deal yourself 8 cards. (Decks will not have 10s, face cards, or jokers) You may use all or some of the cards. For example, if I draw a $7,3,2,2,1,6,8,9$, I could make the problem $732+126=858$, or I could subtract saying 732-126=606; or $732 \times 126=92,232$, or I could make a $126 \div 2=63$. Player can only make 1 equation with each of the cards.
At the end of the play, the answers from all 4 equations will be totaled together, and the winner is the player with the highest total.

1. Divide students into pairs
2. Give each pair a deck of cards (10s, face cards, and jokers removed) and have them create the equations together and find the total of the answers
3. When all have finished, compare the grand totals for each team


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{4 \mathrm{~h}} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Rolling to Zero |
| Focus: | Math vocabulary, basic operations, order of operations |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | five, 6 -sided dice for each pair |
| Socks | Product Hunt Work Sheet |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

## Gain prior knowledge by asking students the following questions

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> The school had a fundraiser to buy new soccer goals. Each classroom sold candy bars for $\$ 1.00$ each. At the end of the first week, this is how each of the $5^{\text {th }}$ grades were doing: <br> Which room sold the most candy? The least? How do you know you are correct? <br> Fact Practice <br> Product Hunt <br> 1. Divide students into pairs <br> 2. Each pair needs a Product Hunt sheet (attached to this lesson plans ) <br> 3. Player rolls two, 12 -sided dice. <br> 4. Player multiplies the two numbers. <br> 5. If the product is not yet covered, then player may cover the product. <br> 6. Next player repeats steps 1-3. | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |

7. Winner is determined by who has the most numbers covered.
Word for Today: equation Math Vocabulary
Description: An equation is a number sentence that has numerals and operations that are
equal on both side of the $=$ sign. Ex.: $4+2=6$ is a simple equation.
Have students share the Vocabulary Notebooks in pairs, discussing the word, making any
additions or changes.
Vocabulary Notebook Sample:

| New Word | My Description |
| :--- | :--- |
| equation | Showing how two things are equal by writing a |
| The equation is $5+8=13$. |  |

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

1. Each player or group of players is given 56 -sided dice; (you can add 12 sided dice to stretch player's skills)
2. Player rolls all the dice.
3. Player works the equation, using addition, subtraction, multiplication, and division, to get to an answer of " 0 ".
4. After working the equation one way, player tries to find as many different ways as possible to get to "0" with the same numbers.
5. Equations should be recorded on paper or white board.

Example:
Player rolls a 6, a 5, a 3, a 2, a 2.

- $(6-5)-(2 * 2) * 3=0$



## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans

Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Grid Areas |
| Focus: | Math |

## Materials:

| White boards | Decks of cards | 2 dice for each pair of students |
| :--- | :--- | :--- |
| Crayolas | Vocabulary Notebooks |  |
| Socks | Graph paper (1/4 "squares) |  |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

Gain prior knowledge by asking students the following questions
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |  |
| :--- | :--- |
| Problem of the Day <br> Rico has 243 papayas and bananas total. If Rico has 72 bananas, how many more <br> papayas does Rico have? Explain how you got your answer. | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout |
| What are the key numbers? The key words? | During the lesson check in <br> with students repeatedly. <br> Check in about what is <br> happening and what they are |
| thinking. |  |




## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{4 \mathrm{~h}}$ \& $5^{\mathrm{th}}$ Grades |
| Lesson Title: | Grid Areas 2 |
| Focus: | Multiplication, area, and math vocabulary |

## Materials:

| White boards | Decks of cards | $30-40$ paper clips for each pair |
| :--- | :--- | :--- |
| Crayolas | Vocabulary Notebooks |  |
| Socks | Graph paper (1/4 " squares) |  |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

## Gain prior knowledge by asking students the following questions

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

## Content (the "Meat")

## Problem of the Day

Mark has a total of 504 chairs. He must put them in rows of 9 . He has decided that he will need to make 56 rows. Is his answer correct? How do you know?

## Fact Practice

## Foreheader

1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.
2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest
3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead
4. The referee multiplies the two numbers together and states the answer
5. Each player looks at the other person's exposed number and names his/her own number
6. Person who wins (accuracy and time), collects both cards
7. Play continues until all cards are gone.
8. Players can repeat play (if there is another time) with each other so each has an

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| opportunity to be both a player and referee |  |  |
| :---: | :---: | :---: |
| Word for Today: Review of the word ar Description: In a figure defined by bounda considered the area. Can be measured in other means <br> Have students share the Vocabulary Note additions or changes. <br> Vocabulary Notebook Sample: <br> New Word <br> area <br> Personal Connection <br> I can find the area of these different shapes. | cabulary <br> $s$, the space inside those boundaries is quare feet, square inches, square miles or <br> ks in pairs, discussing the word, making any <br> My Description <br> The term that refers to the space inside an object <br> Drawing | It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. <br> When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) <br> Vocabulary Notebooks can be made from $1 / 2$ of a composition book |

## Activity

Review "Grid Areas" from yesterday. Discuss how the dimensions of the grid area were determined by rolling the dice.
Explain that today, "Grid Areas" will be determined the student actually measuring items in paper clips and then recording the measurement "to scale" on the grid paper, 1 clip = $1 / 4$ "
box.
Demonstrate: With a string of paper clips hooked together, measure a piece of paper (count the number of clips long and the number of clips wide). Draw the form on the paper using the scale of 1 clip to 1 square. In the center of the drawing, write the number of squares total as you did yesterday).

## Grid Areas \#2

1. Divide students into pairs
2. Give each pair 1 sheet of $1 / 4^{\prime \prime}$ grid paper and $25-30$ paper clips (small work better)
3. Students find 3 things to measure and record the measurements (note: the size of the object is limited by the number of paper clips you give each pair of students)
4. Have pairs share their measurements with other students.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

| Closing |
| :---: |
| Review <br> Say: <br> - Please recap what we did today. <br> - Did we achieve our objectives? |
| Debrief <br> Three Whats <br> Ask the following three what questions: <br> What was your key learning for the day? <br> What opportunities might you have to do this same thing in the "real world"? <br> What advice would you give to a "new" student getting ready to do this activity? |

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's The Average? |
| Focus: | Math vocabulary, basic operations, statistics |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
cards

| Opening |
| :--- |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> John and Cathy are looking at this number: "8,592". Cathy says that the 5 stands for 500. John disagrees and says the 5 is for 50 . Which one is correct and how do you know? <br> Which numbers and words are important? Why? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are |
| Fact Practice <br> Draw! <br> 1. Divide students into pairs and give each pair a deck of cards <br> 2. Remove the face cards and jokers from the deck of cards. <br> 3. Shuffle the deck. <br> 4. Decide who will go first. <br> 5. First player draws two cards. <br> 6. Student multiplies the cards. <br> 7. Student writes his/her problem on the white board, writing a complete number sentence. <br> 8. Students take turns drawing and creating problems. | Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |

## Math Vocabulary

## Word for Today: average

Description: An average is found by adding numbers together and ten dividing the total by the number of numerals that were added together. (Ex. $5+6+7+8=26 \div 4=6 ½$ ) Average is a way of comparing things to a standard. In math we often use the word "mean" instead of the word average.
Have students complete his/her Vocabulary Notebook.

Vocabulary Notebook Sample:

| New Wordaverage | My Description <br> Average refers to the number that could be <br> evenly spread across a group |
| :--- | :--- |
| Personal Connection <br> The temperature here is an average of <br> $81^{\circ}$ if you think year round. | Drawing |

## Activity <br> What's the Average?

Demonstrate: Get a deck of cards (without jokers, face cards, or 10s) and draw our 7 cards. Ask students the process for finding the average (add and then divide). Ask for students to help total the value of the cards. Ask students what the number is to be used as the divisor" 7 " in this case. Ex. Cards include 5, 4, 6, 3, 8, 8, $2+36 \div 7=51 / 7$

Then answer each of these questions:
What is the smallest number? The largest?
What is the average? What is another word for average? (mean)

1. Check in to be sure that students understand the activity.
2. Divide students into pairs
3. Students should find 5 averages
4. Have students record the averages from smallest to largest
5. Students should share the averages they have found with the rest of the class
6. Students should answer the 4 questions above

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

Closing
Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{4 \mathrm{~h}}$ \& $5^{\mathrm{th}}$ Grades |
| Lesson Title: | Who's Average? |
| Focus: | Math vocabulary, average, basic operations |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Paper clips (a box for each group at a minimum
Double 9 Dominoes

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |



## Math Vocabulary

## Word for Today: average

Description: An average is found by adding numbers together and ten dividing the total by the number of numerals that were added together. (Ex. $5+6+7+8=26 \div 4=61 / 2$ ) Average is a way of comparing things to a standard. In math we often use the word "mean" instead of the word average.
Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.

Vocabulary Notebook Sample:

| New Word | My Description <br> average <br> The average is found by adding and then <br> dividing, it tells you a general answer |
| :--- | :--- |
| Personal Connection | Drawing |
| The average number of cookies for each <br> person is 3 cookies. | $3+4+8=15$ |

## Activity <br> Who's Average?

Demonstrate: Create several strings of paper clips hooked together. Ask one student to come up to the front of the room. Measure the students in paper clips. Label this string of paper clips with the student's name. Repeat the process with another student. Use a second string of paper clips. Ask students for the process of finding the average. Adding together and then dividing by the number (in this case number of paper clip strings). Determine the "average" height. Then ask students to determine who in the class would be taller than average and less than average.
Let students know that Who's Average is going to be done as a group effort. Ask students to determine who is the shortest person and who is the tallest person in the classroom. Have the students measure each of these students in paper clip strings. Then have students hook the two pieces together and find the average. Once found, this becomes the "standard"

1. Divide students into groups of 4
2. Each group of 4 should order the students in the classroom as "above average" or "below average"
3. Each group should then line up each side of the continuum to determine if they are correct. Remember, you are not trying to determine who is above or below average, but by determining how correct the prediction of the teams is.

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

| Closing |
| :---: |
| Review <br> Say: <br> - Please recap what we did today. <br> - Did we achieve our objectives? |
| Debrief <br> Three Whats <br> Ask the following three what questions: <br> What was your key learning for the day? <br> What opportunities might you have to do this same thing in the "real world"? <br> What advice would you give to a "new" student getting ready to do this activity? |

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Double 9 Dominoes
(1)



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| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{4 \mathrm{~h}} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Exactly 100 |
| Focus: | Math vocabulary, basic operations, pattern |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | 6-sided dice; 12-sided dice |
| Socks |  |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Study the shapes and determine what the pattern is. Complete the pattern by adding the next 5 shapes, replacing the question marks. | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $9 \times 4=36$ <br> $4 \times 9=36$ <br> $36 \div 4=9$ <br> $36 \div 9=4$ <br> Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families | Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Word for Today: median Math Vocabulary | It is important to review academic math vocabulary often throughout the day. |

Description: While an average is found by adding a set of numbers and then dividing by the number of items in the set. The mean is different. It is important when you are looking for the mean to order the numbers from the smallest to the largest. The median is the number in the middle. For example, in this set of numbers: $3,5,5,6,7,7,7$, the mean is the number " 6 " because it is in the middle. If we were trying to find the average, we would discover that the average is $55 / 7$, slightly less than the median.
Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.

Vocabulary Notebook Sample:

| New Word $\quad$median | My Description <br> In a range of numbers the median is the number <br> in the middle, not in value but in order |
| :--- | :--- |
| Personal Connection | Drawing |
| Put the numbers in order from smallest <br> to largest and then circle the median. |  |

## Activity

Exactly 100

## Demonstrate:

On the white board, draw 3 columns. Label the first $>100$, the center one $\mathbf{1 0 0}$, and the last one < 100
Show students 212 -sided dice and 26 -sided dice.
Explain that you will roll the 4 dice one time. Then ask students to help you create three number sentences. One that equals less than 100, one that equals more than 100, and if possible, one that equals 100 exactly. Example:
Player rolls a 5, 5, 1, and 4
$1[5(5 \times 4)$ ]
$(5 \times 1)+(5-4)+6$
$5(5 \times 4)+1=101$

## Playing the game

1. Divide students into pairs
2. Give each pair two-12-sided dice and two 6 -sided dice.
3. Player \#1 rolls all four dice.
4. Player tries to make an equation, using addition, subtraction, multiplication, and/or division, which will fit in each of the columns above, using the same numbers.
5. Player scores one point for >, one point for <, and 3 points for exactly 100.
6. Highest score wins

Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }}$ \& $5^{\text {th }}$ Grades |
| Lesson Title: | Times Up |
| Focus: | Measuring Time |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Copies of activities at end of Lesson Plan

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |

## Content (the "Meat")

## Problem of the Day

Martin wrote the number 5,732,807 in words. Do you agree or disagree with Martin's response? He wrote: five million, seven hundred thirty-two thousand, eight hundred seventy. Explain why you answered as you did.

## Fact Practice Multiples

Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas ( 150 chart).

1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice)
2. Mark all multiples of the number and then pass off to the next person.
3. Player may mark the same number.

|  |  |
| :--- | :--- |
| Word for Today: median $\quad$ Math Vocabulary |  |

## *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking.

Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

It is important to review academic math vocabulary often throughout the day.

Description: While an average is found by adding a set of numbers and then dividing by the number of items in the set. The mean is different. It is important when you are looking for the mean to order the numbers from the smallest to the largest. The median is the number in the middle. For example, in this set of numbers: $3,5,5,6,7,7,7$, the mean is the number " 6 " because it is in the middle. If we were trying to find the average, we would discover that the average is $55 / 7$, slightly less than the median.
Review the entry from yesterday. Have students discuss in pairs and determine if they want to make any changes in the Vocabulary Notebook entry.

## Vocabulary Notebook Sample:

| New Wordmedian | My Description <br> In a series of numbers the median is the one <br> that is in the middle-location not value |
| :--- | :--- |
| Personal Connection <br> In that string of numbers that has 35 <br> different number, the one that is the <br> median is in the middle. | Drawing |

## Activity

Times Up
This game requires three players: 2 contestants and 1 judge.
Each contestant has a pencil/pen and a white board. The player should make 10 squares on the white board.
You will need one set of Times Cards for every group of 3 people.
To play the game, Times Up Cards are face down in the center.
Player \#1 draws a card and answers the question.
If the answer is correct, then player colors in one square.
If the answer is incorrect, the other player has an opportunity to answer that question correctly and then answer one of their own. They color in each box, 1 box for each correct answer.

Demonstrate: Show students how to play the game. Bring up three students. The "judge" has the answer key.

Answer Key and playing cards are attached to this lesson plan. It is suggested that you print the cards on card stock and laminate for future use.

Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them

Fact Practice--Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

## Times Up Questions

| 1. How many days are there in a <br> year? | 2. How many weeks are there in <br> a year? | 3. Which months have 31 days? <br> 4. How many years in a decade? |
| :--- | :--- | :--- |
| 5. How many years in a century? | 6. How many weeks in a <br> decade? |  |
| 7. How many weeks in a <br> century? | 8. How many hours in a day? | 9. How many hours in a week? |
| 10. How many hours in a year? | 11. How many years in "4 score <br> and 7 years ago..." | 12. How many time zones are <br> there around the world? |
| 13. How many hours are there in <br> 420 minutes? | 14. How many seconds are there <br> in 6 hours? | 15. What time is it when the <br> airport says the time is $1700 ?$ |
| 16. If it is $9: 00$ in LA, what time is <br> it in New York City? | 17. What do the letters "EST" <br> mean? | 18. What is the reason there is <br> Leap Year every 4 years? |
| 19. How many days in a decade? | 20. How many days in a <br> century? | 21. What time is it when the <br> airport says the time is 0600? |
| 22. How many quarters in a <br> year? | 23. How many minutes in 3 <br> days? | 24. How many days in 4 years? |

## Times Up! Answer Key

1. 365 days
2. 52 weeks
3. January, March, May, July, August, October, December
4. 10 years
5. 100 years
6. 520 weeks
7. 5,200 weeks
8. 24 hours
9. 168 hours
10. 8,760 hours
11. 87 years
12. 24 time zones
13. 7 hours
14. 360 seconds
15. 5:00 p.m.
16. 12:00
17. Eastern Standard Time
18. Each year there is actually $1 / 4$ of a day over 365 days. Each 4 years the total "extra" equals 1 day, so it is added to the calendar.
19. $3,652+1 / 2$ of a day
20. 36,500 days
21. $6: 00 \mathrm{a} . \mathrm{m}$.
22. Four quarters
23. 4,320 minutes
24. 1,461 (Remember leap year)

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Tic Tac Toe |
| Focus: | Math vocabulary, multiples and multiplication |

## Materials:

White boards Vocabulary Notebooks
Crayolas
Socks

| Opening |
| :--- |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |

## Content (the "Meat")

## Problem of the Day

Susan has a total of $\$ .85$. She has only quarters, dimes and nickels. How many different ways could Susan have the total of $\$ .85$ ?
Show all possible ways. (draw them on a piece of paper)
How do you know you have all of the ways?

## Fact Practice

## Spokes on a Wheel

1. Divide students into pairs
2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire)
3. Have students choose to put a 6,7 or 8 in the center circle
4. Student rolls two dice and adds the pips (dots)
5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$
6. Process continues until all spokes have an equation

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Math Vocabulary |  |
| :---: | :---: |
| Word for Today: multiple |  |
| Description: A number that is a multiple of another number would be the product of that base number times another number. Example: 3, 6, 9, 12, 15, 18, 21, 24, 27, and 30 are all multiples of 3 |  |
| Students complete the Vocabulary Notebook |  |
| Vocabulary Notebook Sample: |  |
| New Word | My Description |
| multiple | A series of numbers that are related because of the equal difference between them |
| Personal Connection | Drawing |
| It is easy to count in multiples of 2,5 and 10. |  |

## Activity

## Tic Tac Toe

Demonstrate: Draw a Tic Tac Toe on the board. Write a different number in each of the spaces. Explain that to "claim" a space student must name a least 3 multiple of the number in the Tic Tac Toe Space

| 5 | 3 | 9 |
| :--- | :--- | :--- |
| 4 | 1 | 7 |
| 8 | 2 | 6 |

If I would like to place my mark in the 6 space, I must say at least 3 of the following multiples: $6,12,18,24,30,36,42,48,54$, or 60

## Tic Tac Toe

1. Divide students into pairs
2. Give each group a white board and markers (or crayolas) 2 different colors
3. They will play a total of 10 games, each game board should be different, numbers in different places on the board
4. When 10 games have been played, have students report wins, losses, and the number of cat's games
5. Record totals on a chart

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

Closing
Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Making A Whole |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
dice
decks of cards (jokers and face cards removed)

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Business made a profit of $\$ 240.80$. Sue keeps $1 / 2$ of the profits. She give each of the 5 people who work for her $20 \%$ of the other $1 / 2$ of the profits. How much does each person get? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. |
| Fact Practice <br> Spokes on a Wheel <br> 1. Divide students into pairs. <br> 2. On a white board, student draws a small circle with 9 spokes coming out of it. (should look like a bicycle tire) <br> 3. Have students choose to put a 6,7 or 8 in the center circle. <br> 4. Student rolls two dice and adds the pips (dots). <br> 5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$ <br> 6. Process continues until all spokes have an equation. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: percentage <br> Description: Percentage refers to a fraction when the assumption is made that the denominator is 100 . So if $100 \%$ is whole, $57 \%$ indicates that 57 out of the 100 has been found, or correct, or is being used. \% is the symbol for percent. Percent fives you an | It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. |

opportunity to compare things that do not necessarily have a denominator of 100 to begin with, but when translated into percentage, this allows the comparison to be made.
Students complete the Vocabulary Notebook
Vocabulary Notebook Sample:

| New Word | My Description <br> percentage |
| :--- | :--- |
| A way to compare by telling how many out of <br> a hundred |  |
| I was happy that I had 82\% on my social |  |
| studies test. |  |$\quad$ Drawing

## Activity <br> Making A Whole

Explain to students that we are going to use cards to create fractions that can be added together to equal a whole number.
Demonstrate: Bring students up to the front as volunteers and show them how to play the game, Making A Whole as described below. Be sure that students can play the game effectively and then have them play with a partner.

Materials: Deck of cards with jokers and face cards removed White board

## Directions:

1. Shuffle the deck
2. Deal 6 cards to each player
3. Player one arranges the cards, if possible to create two fractions that will total a whole number. For example: $3 / 6+1 / 2=1$
4. Player that creates a problem that totals 1 receives one point. If he/she cannot make a fraction, he draws a card and discards one that he/she currently has.
5. Second player does the same.
6. Play continues until one player has a total of 10 points.

When possible, have students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }}-5^{\text {th }}$ Grades |
| Lesson Title: | Making A Whole |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks |  |
| :--- | :--- | :--- |
| Crayolas | Decks of cards | Socks |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> John has 100 basketballs. 70 or brownish orange. The rest are white. Write a \% that shows how many white basketballs John has. | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in |
| Fact Practice <br> Multiplication Ladder <br> 1. Give each student a white board (include marker or crayola). <br> 2. Student should draw a ladder like the one below. <br> 3. Have student roll 2 dice, total the pips and then multiply that number times each of the numbers in the ladder, writing the total to the right of the number. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for today: Review the word percentage <br> Description: Review the information that you gave the students yesterday about the term | It is important to review academic math vocabulary often throughout the day. |

percentage. Remind students of the symbol that represents the word percentage (\%). Make several drawing on the board to show different percentages and how to correctly write the number and the symbol ex. $74 \%, 89 \%, 94 \%$ etc.

Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.
Vocabulary Notebook Sample:

| New Word <br> percentage | My Description <br> A part of the whole related to 100 parts in <br> the whole |
| :--- | :--- |
| Personal Connection <br> I got 100\% on my spelling test. | Drawing |

## Activity <br> Making A Whole

Review with the students how to play the game that they learned how to play yesterday. Be sure that students can play successfully before having them play on their own.
Materials: Deck of cards with jokers and face cards removed White board
Directions:

1. Shuffle the deck
2. Deal 6 cards to each player
3. Player one arranges the cards, if possible to create two fractions that will total a whole number. For example: $3 / 6+1 / 2=1$
4. Player that creates a problem that totals 1 receives one point. If he/she cannot make a fraction, he draws a card and discards one that he/she currently has.
5. Second player does the same.
6. Play continues until one player has a total of 10 points.

Complete the Vocabulary notebook for each word.
When possible, have students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them>

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }}$ \& $5^{\text {th }}$ Grades |
| Lesson Title: | Fraction War |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | decks of cards |
| Socks | Fraction Cards (attached) |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Write a fraction that shows the number of vowels in the word: thermometer | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are |
| Fact Practice <br> Draw! <br> 1. Divide students into pairs and give each pair a deck of cards. <br> 2. Remove the face cards and jokers from the deck of cards. <br> 3. Shuffle the deck. <br> 4. Decide who will go first. <br> 5. First player draws two cards. <br> 6. Student multiplies the cards. <br> 7. Student writes his/her problem on the white board, writing a complete number sentence. <br> 8. Students take turns drawing and creating problems. | thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: fraction <br> Description: A fraction is a number that is less than one and has two parts a numerator and a denominator. The denominator tells you have many parts you have to have in order to have the whole thing. If the denominator is 6 , then the whole has been divided into 6 parts, if the | It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. |

denominator is 9 , then the whole has been divided into 9 parts. The numerator tells you how many of parts of the whole you have. So if the denominator is 6 , it tells me that a whole has six parts, a numerator of 5 tells me that I have 5 of those six parts. It is a fraction that allows us to divide one thing into equal parts.
Have students complete his/her Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word $\quad$ Fraction | My Description <br> A number that represent less than a whole |
| :--- | :--- |
| Personal Connection <br> was able to get only a fraction of the work <br> done. |  |

## Activity <br> Fraction War

Demonstrate: Show the class how to play the game by bringing up volunteers to demonstrate how to play the game following the directions below.
Materials: Fraction addition and subtraction cards.
Directions:

1. Shuffle the cards and divide them equally between the 2 players
2. Players turn the top card over simultaneously
3. Player adds or subtracts the problem on the top card and calls out the answer.
4. Player with the highest value collects all of the cards
5. In the case of a tie, a next card is played.

When possible, have students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fraction Cards

| $\frac{1}{2}+\frac{1}{2}$ | $\frac{1}{4}+\frac{1}{4}$ | $\frac{1}{4}+\frac{2}{4}$ | $\frac{2}{4}+\frac{1}{4}$ |
| :---: | :---: | :---: | :---: |
| $\frac{1}{4}+\frac{3}{4}$ | $\frac{1}{8}+\frac{1}{8}$ | $\frac{1}{8}+\frac{2}{8}$ | $\frac{1}{8}+\frac{3}{8}$ |
| $\frac{1}{8}+\frac{5}{8}$ | $\frac{2}{8}+\frac{1}{8}$ | $\frac{2}{8}+\frac{2}{8}$ | $\frac{2}{8}+\frac{3}{8}$ |
| $\frac{2}{8}+\frac{4}{8}$ | $\frac{2}{8}+\frac{6}{8}$ | $\frac{3}{8}+\frac{1}{8}$ | $\frac{3}{8}+\frac{2}{8}$ |
| $\frac{3}{8}+\frac{3}{8}+\frac{4}{8}$ | $\frac{3}{8}+\frac{5}{8}$ | $\frac{4}{8}+\frac{1}{8}$ |  |
| $\frac{4}{8}+\frac{4}{8}$ | $\frac{5}{8}+\frac{2}{8}$ | $\frac{6}{8}+\frac{1}{8}$ | $\frac{7}{8}+\frac{1}{8}$ |
| $\frac{2}{2}-\frac{1}{2}$ | $\frac{3}{4}-\frac{1}{4}$ | $\frac{3}{4}-\frac{2}{4}$ | $\frac{4}{4}-\frac{1}{4}$ |
| $\frac{8}{8}-\frac{1}{8}$ | $\frac{8}{8}-\frac{2}{8}$ | $\frac{8}{8}-\frac{3}{8}$ | $\frac{8}{8}-\frac{5}{8}$ |
| $\frac{7}{8}-\frac{1}{8}$ | $\frac{7}{8}-\frac{3}{8}$ | $\frac{7}{8}-\frac{4}{8}$ | $\frac{7}{8}-\frac{6}{8}$ |


| $\frac{6}{8}-\frac{1}{8}$ | $\frac{6}{8}-\frac{2}{8}$ | $\frac{6}{8}-\frac{5}{8}$ | $\frac{6}{8}-\frac{5}{8}$ |
| :---: | :---: | :---: | :---: |
| $\frac{5}{8}-\frac{1}{8}$ | $\frac{5}{8}-\frac{3}{8}$ | $\frac{5}{8}-\frac{4}{8}$ | $\frac{4}{8}-\frac{1}{8}$ |
| $\frac{4}{8}-\frac{2}{8}$ | $\frac{3}{8}-\frac{1}{8}$ | $\frac{3}{8}-\frac{2}{8}$ | $\frac{2}{8}-\frac{1}{8}$ |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Fraction War Cards |
| Focus: | Fractions |


| Materials: |  |
| :--- | :--- |
| White boards | Vocabulary Notebooks |
| Crayolas | Fraction War Cards from yesterday |
| Socks | Double 9 Dominoes |

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills.

## Gain prior knowledge by asking students the following questions

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |
| :--- | :--- |
| Problem of the Day |
| The kids are going on a field trip. From Mrs. Johnson's room 3.4 bring lunch from home. In Mr. |
| Martin's class, $5 / 8$ bring lunches from home. If each class has 32 students, how many kids <br> brought lunch from home? |

## Fact Practice

Spots and Dots
There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

Players sit across from each other.
Dominoes are between them, face (or spots) down.
Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is


Multiplication: $2 \times 3=6$

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have
pieces you have.
Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.
Vocabulary Notebook Sample:

| New Word $\quad$ My Description |
| :--- | :--- |
| A number that is less than one whole, has two |
| numbers, a numerator on top and a |
| denominator on the bottom. |$|$

Activity

## Fraction War

Review: Review the game from yesterday. Ask students how to play the game and what sort of things could "trip" a person up.
Play the game.
Materials: Fraction addition and subtraction cards

## Directions:

1. Shuffle the cards and divide them equally between the 2 players.
2. Players turn the top card over simultaneously.
3. Player adds or subtracts the problem on the top card and calls out the answer.
4. Player with the highest value collects all of the cards.
5. In the case of a tie, a next card is played.
students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular
way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them>

Double 9 Dominoes








| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Decimal Bingo |
| Focus: | Decimals |

## Materials:

| White boards | Decks of cards | deck of cards for each pair |
| :--- | :--- | :--- |
| Crayolas | Vocabulary Notebooks |  |
| Socks | Bingo Cards |  |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> John and Jorge are going to an amusement park. They plan to eat lunch at the park as well as enjoy the rides. It will cost $\$ 13.00$ for admission, $\$ 2.50$ for a hot dog, and a soda will cost $\$ 1.75$. John says the will only need to take $\$ 16.00$. Jorge says they need to each take $\$ 20.00$. Who do you agree with and how did you decide? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Multiplication War <br> - Divide students into pairs. Give each pair a deck of cards without face cards and jokers. <br> - Shuffle the deck and divide the cards evenly between the two players. <br> - On go, the players turn over the cards at the same time. <br> - Students multiply the 2 numbers that have been turned up. <br> - First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer. <br> - At the end of round, students may reshuffle the pile of cards that they have. <br> - Play can continue until one player has all cards or time has called. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: decimal <br> Description: A decimal is a period that separates whole numbers from numbers that represent a part of a whole. The most common place that we find a decimal is in the writing | It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. |

of dollars and cents. To write money, start with a \$ sign and tell how many dollars are there, for example, $\$ 3$. Second step is to put the decimal or the dot after the 3 to show that we are not looking at "cents", the kind that can take 100 pennies to equal a dollar. Remind students that pennies, nickels, dimes, quarter, and half dollars, represent a portion of the dollar. If I have 3 dollars, 1 quarter and 1 dime, I would have $\$ 3.35$. Give children several chances to make this new information work.

Vocabulary Notebook Sample:

| New Word <br> decimal | My Description <br> A mathematical "period" that separates whole number from a part of the whole |
| :---: | :---: |
| Personal Connection <br> I use a decimal point to write 4.25 which says I have 4 whole things and 25 of a fifth one. | Drawing |

## Activity Decimal Bingo

Demonstrate how to set up the Bingo Card by using the answers randomly on the bingo board. New bingo cards can be made each time the game is played. Draw a large Bingo card on the board and demonstrate exactly how to set up the card.

## Decimal Bingo

Materials: Bingo Cards, Bingo answer sheet, tokens or paper to mark spaces

## Directions:

1. Student makes Bingo Card by placing the answers randomly on his/her card
2. Leader draws a problem card, writes the problem on the board.
3. Students find the answer to the problem and then if that answer is one that they selected, then that number is covered.
4. Winner calls Bingo when they have.

When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Bingo Cards

| B | I | N | G | O |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  | Free |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Problem and Answer Cards

| $\begin{array}{r} 0.5 \\ +0.5 \\ \hline \end{array}$ | $\begin{array}{r} 0.1 \\ +0.6 \\ \hline \end{array}$ | $\begin{array}{r} 0.3 \\ +0.5 \\ \hline \end{array}$ | $\begin{array}{r} 0.6 \\ +0.9 \\ \hline \end{array}$ | $\begin{array}{r} 0.4 \\ +0.2 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} 45.3 \\ +10.2 \\ \hline \end{array}$ | $\begin{array}{r} 82.3 \\ +101.4 \\ \hline \end{array}$ | $\begin{array}{r} 17.3 \\ +22.8 \\ \hline \end{array}$ | $\begin{array}{r} 54.3 \\ +45.2 \\ \hline \end{array}$ | $\begin{array}{r} 14.6 \\ +25.6 \\ \hline \end{array}$ |
| $\begin{array}{r} 2.6 \\ +24.3 \\ \hline \end{array}$ | $\begin{array}{r} 118.1 \\ +67.6 \\ \hline \end{array}$ | $\begin{array}{r} 12.3 \\ +54.1 \\ \hline \end{array}$ | $\begin{array}{r} 7.5 \\ +29.4 \\ \hline \end{array}$ | $\begin{array}{r} 33.2 \\ +32.2 \\ \hline \end{array}$ |
| $\begin{array}{r} 1.5 \\ -0.8 \\ \hline \end{array}$ | $\begin{array}{r} 63.4 \\ -57.8 \\ \hline \end{array}$ | $\begin{array}{r} 7.5 \\ -3.6 \\ \hline \end{array}$ | $\begin{array}{r} 108.2 \\ -94.7 \end{array}$ | $\begin{array}{r} 1.2 \\ -0.6 \\ \hline \end{array}$ |
| $\begin{array}{r} 25.1 \\ -16.4 \end{array}$ | $\begin{array}{r} 99.1 \\ -24.9 \\ \hline \end{array}$ | $\begin{array}{r} 2.1 \\ -0.9 \\ \hline \end{array}$ | $\begin{array}{r} 480.3 \\ -358.9 \\ \hline \end{array}$ | $\begin{array}{r} 79.4 \\ -5.9 \end{array}$ |
| $\begin{array}{r} 1.2 \\ -0.5 \\ \hline \end{array}$ | $\begin{array}{r} 826.1 \\ -745.9 \\ \hline \end{array}$ | $\begin{array}{r} 512.4 \\ -460.8 \\ \hline \end{array}$ | $\begin{array}{r} 3.5 \\ -1.6 \\ \hline \end{array}$ | $\begin{array}{r} 50.3 \\ -19.4 \\ \hline \end{array}$ |

Answer Cards

| 1.0 | 0.7 | 0.8 | 1.5 | 0.6 |
| :---: | :---: | :---: | :---: | :---: |
| 55.5 | 183.7 | 40.1 | 99.5 | 40.2 |
| 26.9 | 185.7 | 66.4 | 36.9 | 65.4 |
| 0.7 | 5.6 | 3.9 | 13.5 | 0.6 |
| 8.7 | 74.2 | 1.2 | 121.4 | 73.5 |
| 0.7 | 80.2 | 51.6 | 1.9 | 30.9 |
|  |  |  |  |  |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Decimal Bingo 2 |
| Focus: | Decimals |

## Materials:

| White boards | Decks of cards | Socks |
| :--- | :--- | :--- |
| Crayolas | Vocabulary Notebooks | Decimal Bingo materials from yesterday |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |

## Content (the "Meat")

## Problem of the Day

Cupcakes, decorated cookies, donuts, and chocolate chip cookies are sold at the corner bakery. The prices are $\$ 2.50, \$ 1.75, \$ 1.90$, and $\$ 1.15$. How much does each item cost.

Chocolate chip cookies cost more than donuts
Decorated cookies cost the most
Neither the donuts or the cupcakes cost $\$ 1.75$

## Fact Practice

## Fore-header

1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.
2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest
3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead.
4. The referee multiplies the two numbers together and states the answer.
5. Each player looks at the other person's exposed number and names his/her own number.
6. Person who wins (accuracy and time), collects both cards.
7. Play continues until all cards are gone.
8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee.

Word for today: decimal
Description: Review the information that you shared with students yesterday. Explain to students that numbers written to the right of a decimal point are labeled tenths, hundredths, thousandths, ten-thousandths, and hundred-thousandths. Explain that the letters "th" share the information that it is a decimal. Also share that when reading these number, the decimal point is read by saying the word "and".
Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.
Vocabulary Notebook Sample:

| New Word | My Description <br> Decimal |
| :--- | :--- |
| A point that looks like a period that separates <br> a whole number from a part of a whole |  |
| Personal Connection <br> I use a decimal point when I write <br> information about money: $\$ 14.67$. | Drawing |

## Activity <br> Decimal Bingo

Review yesterday's game as you will play it again today. You will use the same material as yesterday.

Decimal Bingo
Materials: Bingo Cards, Bingo answer sheet, tokens or paper to mark spaces

## Directions:

1. Student makes Bingo Card by placing the answers randomly on his/her card.
2. Leader draws a problem card, writes the problem on the board.
3. Students find the answer to the problem and then if that answer is one that they selected, then that number is covered.
4. Winner calls Bingo when they have.
academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Dueling Decimals |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
6 -sided dice; 12-sided dice decks of cards

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Julie believes that the answer to the problem below written in its simplest form if $6 / 9$. $5 / 9+1 / 9=$ <br> Is she correct? Why or why not? | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $9 \times 4=36$ <br> $4 \times 9=36$ $36 \div 4=9$ $36 \div 9=4$ <br> Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families. | Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: simplest form <br> Description: Simplest form is a term we use when we talk about fractions. When a fraction is written in its simplest form there is no common number that can be divided into the numerator | It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary |

and/or the denominator with the exception of 1 . For example $1 / 2$ is in its simplest form, however $2 / 4$ is not, because both the numerator and the denominator can be divided by 2 . Have students begin with a whole piece of paper. Have them decide how many pieces they will divide the paper into (not more than 12). Then have them divide the paper into that many pieces. This number will become the denominator. Have them select various numbers of pieces for the numerator. Record the fraction, written in the simplest form.
Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.
Vocabulary Notebook Sample:

| New Word | My Description <br> Refers to writing numbers in its most simple <br> form, making it easier for other to understand <br> what we are thinking |
| :--- | :--- |
| Personal Connection <br> When I am finished adding fractions I <br> want to put the answer into its simplest <br> form. | Drawing |

## Activity <br> Dueling Decimals

Demonstrate how to play this game by asking volunteers to come to the front and teaching them the rules of the game as written below.
Materials: Deck of cards without tens, jokers, and face cards removed. Separate the ace (1), 2,3 , and 4 of hearts from the deck and hold them separately. White board

## Directions:

The object of this game is to create the largest number.
Shuffle the remaining cards.
Player one draws a card from the 4 hearts (either an ace or $1,2,3$, or 4 . This number will indicate where to place the decimal. Example:

| $\bullet-1$ | $\bullet-2$ | $\bullet-3$ | $\bullet-4$ |
| :---: | :---: | :---: | :---: |

If player draws the 3 of hearts, then the decimal would be in this location on his/her white board.


Player then draws one of the other cards (for example a 3. Player must decide where to place the 3 in the number grid on his/her white board.
After the number is placed, player two repeats the process.


Player one draws another card and places it on the grid (the card that is already on the card
notebook for each word. When possible, have students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
can NOT be moved.
When all three numerals are placed, the largest number wins.

## Closing <br> Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak).
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Dueling Decimals 2 |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Copies of activities at end of Lesson Plan
Decks of cards

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |

## Content (the "Meat")

Problem of the Day

## *Activity $\rightarrow$ Teachable Moment(s) throughout

It's Valentine's Day. 3/10 of the students received paper valentines. $1 / 10$ received a candy treat. The others received both paper valentines and a candy treat. What fraction (in its simplest form) got both paper and candy valentines?

## Fact Practice

Multiples
Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas (150 chart).

1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice)
2. Mark all multiples of the number and then pass off to the next person.
3. Player may mark the same number.

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

It is important to review academic math vocabulary often throughout the day.

Description: Remind students of the conversation yesterday about fractions being written in the simplest form. Remind them that this means the numbers could not both be divided by the same number other than 1.
Review the entry from yesterday. Have students discuss in pairs and determine if they want to make any changes in the Vocabulary Notebook entry.

## Vocabulary Notebook Sample:

| New Word | My Description <br> Simplest form <br> Refers to fraction written in the lowest <br> comparison (435 of 870 is the same as $1 / 2)$ |
| :--- | :--- |
| Personal Connection <br> Please rewrite those fractions in the <br> simplest form. <br> Drawing |  |
| $\frac{\mathbf{2}}{\mathbf{4}} \frac{\mathbf{1}}{\mathbf{2}}$ |  |

## Activity <br> Dueling Decimals

Review with students how to play this game and then allow them to play with new partners, etc. form last week.

## Dueling Decimals

Materials: Deck of cards without tens, jokers, and face cards removed. Separate the ace (1), 2,3 and 4 of hearts from the deck and hold them separately. White board
Directions:
The object of this game is to create the largest number.
Shuffle the remaining cards.
Player one draws a card from the 4 hearts (either an ace or $1,2,3$, or 4 . This number will indicate where to place the decimal. Example:

| $\bullet-1$ | $\bullet-2$ | $\bullet-3$ | $\bullet-4$ |
| :--- | :--- | :--- | :--- |

If player draws the 3 of hearts, then the decimal would be in this location on his/her white board.


Player then draws one of the other cards (for example a 3. Player must decide where to place the 3 in the number grid on his/her white board.
After the number is placed, player two repeats the process.


Player one draws another card and places it on the grid (the card that is already on the card can NOT be moved.
When all three numerals are placed, the largest number wins.

Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice--Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th } \& 5^{\text {th }} \text { Grades }}$ |
| Lesson Title: | Tic Tac Toe |
| Focus: | Fractiona |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks two, 12-sided dice for each pair Product Hunt Work Sheet

Materials from yesterday

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |

## Content (the "Meat")

## Problem of the Day

You've been saving quarters for a long time and you have them in your piggy bank. If piggy banks were all the same size and held the same number of quarters, would you rather have 3 $1 / 10$ banks or $37 / 10$ banks? Why?

## Fact Practice

## Product Hunt

1. Divide students into pairs.
2. Each pair needs a Product Hunt sheet (attached to this lesson plans).
3. Player rolls two, 12 -sided dice.
4. Player multiplies the two numbers.
5. If the product is not yet covered, then player may cover the product.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

## Math Vocabulary

## Word for Today: equivalent

Description: Review the word equivalent from yesterday. Talk with students about what equivalent means. Ask students to divide themselves into two equivalent groups. Ask students if they should consider just numbers, or number of girls and boys, people who are

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.
It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
this age or that. Ask them to determine in what way the groups will be equivalent. Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.
Vocabulary Notebook Sample:

| New Word <br> equivalent | My Description <br> Things that are equal are equivalent |
| :--- | :--- |
| Personal Connection <br> My 4 quarters are equivalent to your 10 <br> dimes. | Drawing |

Activity
Tic Tac Toe
Review the game from yesterday and talk about the equivalent fractions, decimals, and percentages. Have students pick new partners to play the game with. Use the game materials from yesterday.

## Directions:

1. The first column must contain a fraction card, the second column a decimal card, and the third column the percentage card.
2. When player one places his/her first card, the equivalence value of the row has been determined.
3. For example, if the first person plays .5 in the center of the Tic Tac Toe, then if the second player wants to block right or left, he/she must play the fraction or \% card that is equal to .5 .
4. Likewise, if the second player wants to play top left, then he/she must play a fraction card other than $1 / 2$, since that is being used in the center row.

When possible, have students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | How Many Do You Have? |
| Focus: | Review |

## Materials:

Post Its
Dice
Prizes (these can be time, a leadership role, opportunities to be the "teacher"

| Opening |  |
| :--- | :--- |
| Today we are going to have fun playing a game. | State the objective |

## Content (the "Meat")

## Activity

## How Many Do You Have?

1. Divide students in groups of $3-4$
2. On the Post-lt, each group writes a number between 5 and 70
3. Post the numbers in numeric order on the white board or a chart.
4. Roll 5 dice one time and one time only
5. Teams are to use any math that they know ( $+,-, X, \div$, use of parenthesis, exponents) to make each of the numbers on the Post Its.
6. Give Teams 20-25 minutes to complete the task
7. Team that has the most correct equations, wins the prize

|  |  |
| :---: | :---: |
| Say: | Closing |
| • Please recap what we did today. | Review |
| $\bullet$ |  |

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\mathrm{h}} \& 5^{\mathrm{h}}$ Grades |
| Lesson Title: | Tic Tac Toe Equivalents |
| Focus: | Fractions, Decimals, Percentage Equivalents |

## Materials:

| White boards | Vocabulary Notebooks | Tic Tac Toe Game Pieces |
| :--- | :--- | :--- |
| Crayolas | Cards |  |
| Socks | Tic Tac Toe Board (attached to this lesson plan) |  |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day Julie needs to have 3 equivalent fractions for $3 / 4$. What would these be? $3 / 4=$ $\qquad$ $\qquad$ $\qquad$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. |
| Fact Practice <br> Target <br> 1. Divide students into trios. <br> 2. Each trio needs a deck of cards without face cards and jokers. <br> 3. Place the cards face up in a TicTac Toe Grid. <br> 4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1) <br> 5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide. <br> 6. Each card may be used only one time in the equation. <br> 7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2. <br> 8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck. <br> 9. Player with the most cards at the end of the game win. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Word for Today: equivalent Math Vocabulary | It is important to review academic math vocabulary often throughout the day. |

Description: This term refers to things being equal. For example, if you half of an able it is equivalent to having $2 / 4$ of the apple, or $3 / 6$ of the apple, or $4 / 8$ of the apple. These are all ways of looking at how we might divide a $1 / 2$ of an apple so that we are talking about equivalents. Equivalent is two things of equal value. Ask students to consider money equivalents.
Students should complete the Vocabulary Notebook.
Vocabulary Notebook Sample:

| New WordEquivalent | My Description <br> Things that are equal in value or amount |
| :--- | :--- |
| Personal Connection <br> We have an equivalent number of cookies <br> for everyone. | Drawing |

Activity

## Tic Tac Toe

Purpose of the game is to learn the equivalents in terms of fractions, decimals, and percentages.
Explain to students that fractions, decimals and percentages can be equivalent. For example $1 / 2$ is also .5 and $50 \%$. $1 / 4$ is also .25 and $25 \%$. Talk with students and determine other equivalents (thirds, eights, tenths, sixths, etc.)
Demonstrate how to play the Tic Tac Toe game, bringing students up as volunteers to show students how to play.

## Directions:

1. The first column must contain a fraction card, the second column a decimal card, and the third column the percentage card.
2. When player one places his/her first card, the equivalence value of the row has been determined.
3. For example, if the first person plays .5 in the center of the Tic Tac Toe, then if the second player wants to block right or left, he/she must play the fraction or \% card that is equal to .5 .
4. Likewise, if the second player wants to play top left, then he/she must play a fraction card other than $1 / 2$, since that is being used in the center row.

Complete the Vocabulary notebook for each word.
When possible, have students experience the word. (Ex. 4 students creating a right angle, multiple students acting out an equation.)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Fraction | Decimal | Percent |
| :--- | :--- | :--- |
|  |  |  |
|  |  |  |


| $1 / 4$ | .25 | $25 \%$ |
| :---: | :---: | :---: |
| $1 / 2$ | .5 | $50 \%$ |
| $3 / 4$ | .75 | $75 \%$ |
| $1 / 8$ | .125 | $12.5 \%$ |
| $1 / 3$ | .33 | $33 \%$ |
| $2 / 3$ | .67 | $67 \%$ |
| $3 / 8$ | .375 | $37.5 \%$ |
| $5 / 8$ | .625 | $62.5 \%$ |
| $7 / 8$ | .875 | $87.5 \%$ |
| $1 / 10$ | .1 | $10 \%$ |



| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grade |
| Lesson Title: | Time to Multiply |
| Focus: | Multiplication |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
6 -sided dice; 12 -sided dice decks of cards

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> John had 873 cookies. He put 396 of them in a box for the students in his afterschool program. John estimates that he has about 480 cookies left. Do you agree? Why or why not? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $\begin{aligned} & 9 \times 4=36 \\ & 4 \times 9=36 \\ & 36 \div 4=9 \\ & 36 \div 9=4 \end{aligned}$ <br> Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families | Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Word for Today: estimate Math Vocabulary | It is important to review academic math vocabulary often throughout the day. |

Description: Estimate is a word we use in math to talk about a best or educated guess. If there are many items, say paper clips, in a pile and you would like to know about how many paper clips are there, you can count them, or you can estimate the number that are there. Unlike a guess where you simply hope that you are right, an estimate is made based on information. So if I picked up a handful of paper clips and discovered that I could hold 100, and I checked it out and the pile of paper clips was 5 handfuls, then I could estimate that there were 500 paper clips in the pile.
Create and entry in your Vocabulary Notebook for the word "estimate".
Vocabulary Notebook Sample:

| New Wordestimate | My Description <br> A guess about something—like how many, <br> based on information |
| :--- | :--- |
| Personal Connection <br> I estimate that there are 100 beans in the <br> jar. | Drawing |

## Activity

Time To Multiply
Replay the game from yesterday. Review the rules of play.
Materials:

- Deck of Cards (remove 10s. face cards and jokers)
- White boards
- Vis-à-vis pens

Purpose of the game: Practice the operations of multiplying and subtracting.

## Directions:

1. One player stacks the cards face-down in a pile.
2. Player 1 draws two cards, multiplies the numbers, and says the product.
3. Player 2 takes a turn in the same way.
4. The player with the greater product finds the difference between those two products. The player records the difference as the number of points earned for the round. The used cards are placed in a discard pile. If it's a tie, neither player earns points for the round
5. Play continues in the same way until all the cards have been used. The player with the most points at the end of the game wins.

Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th } \& 5^{\text {th }} \text { Grades }}$ |
| Lesson Title: | Time To Multiply 2 |
| Focus: | Multiplication |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Double 9 Dominoes

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |

## Content (the "Meat")

Problem of the Day

## *Activity $\rightarrow$ Teachable Moment(s) throughout

Jean is going to a concert at the park. She read in the newspaper that there were only 6,000 tickets for sale. The concert has already sold 4,831 tickets. How many do they have left to sell to be sold out?

## Fact Practice

## Spots and Dots

There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

Players sit across from each other.
Dominoes are between them, face (or spots) down.
Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is


Multiplication: $2 \times 3=6$

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

## Math Vocabulary

## Word for Today: subtract

Description: Subtract is a mathematical operation that requires you to remove some items from the group. For instance, if you have 10 cookies and you eat 2 of them (you remove them from the group of 10 cookies) you have 8 cookies left. It doesn't matter how you subtract the items, you must remove them from the group in question.
Create an entry in your Vocabulary Notebook for the word "subtract".

Vocabulary Notebook Sample:

| New Word | My Description <br> subtract you start with 10 cookies and you share <br> three of them, subtract 3 from 10 to find out <br> the number of cookies you have |
| :--- | :--- |
| Personal Connection <br> I will subtract that money from my piggy <br> bank. | Drawing |

## Activity <br> Time To Multiply

## Materials:

- Deck of Cards (remove 10s. face cards and jokers)
- White boards
- Vis-à-vis pens

Purpose of the game: Practice the operations of multiplying and subtracting.

## Directions:

1. One player stacks the cards face-down in a pile.
2. Player 1 draws two cards, multiplies the numbers, and says the product.
3. Player 2 takes a turn in the same way.
4. The player with the greater product finds the difference between those two products. The player records the difference as the number of points earned for the round. The used cards are placed in a discard pile. If it's a tie, neither player earns points for the round.
5. Play continues in the same way until all the cards have been used. The player with the most points at the end of the game wins.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

Consult 4 Kids Lesson Plans


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.


## Double 9 Dominoes



| $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| :---: | :---: | :---: | :---: | :---: |
| $\bullet$ | $\bullet$ |  |  |  |
| $\bullet \bullet$ | $\bullet \bullet$ | $\bullet$ | $\bullet$ | $\bullet \bullet$ |
| $\bullet \bullet$ | $\bullet \bullet$ | $\bullet \bullet$ | $\bullet$ | $\bullet \bullet$ |
| $\bullet$ | $\bullet \bullet$ |  |  |  |




| $\bullet \bullet$ | $\bullet \bullet \bullet$ |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ |  | $\bullet$ | $\bullet \bullet$ |
| $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ |  |  |  |
| $\bullet \bullet \bullet$ | $\bullet \bullet$ | $\bullet \bullet \bullet$ | $\bullet \bullet$ | $\bullet \bullet \bullet$ |
| $\bullet \bullet \bullet$ | $\bullet \bullet$ | $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ |
| $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ | $\bullet \bullet \bullet$ |



| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Make That Number |
| Focus: | Review |

## Materials:

Post Its
Dice
Prizes (these can be time, a leadership role, opportunities to be the "teacher"

| Opening |  |
| :--- | :--- |
| Today we are going to have fun playing a game. | State the objective |

## Content (the "Meat") <br> Activity <br> Make That Number

1. Divide students in groups of $3-4$
2. On the Post-lt, each group writes a number between 5 and 70
3. Post the numbers in numeric order on the white board or a chart.
4. Roll 5 dice one time and one time only
5. Teams are to use any math that they know ( $+,-, X, \div$, use of parenthesis, exponents) to make each of the numbers on the Post Its.
6. Give Teams 20-25 minutes to complete the task
7. Team that has the most correct equations, wins the prize

|  |  |
| :---: | :---: |
| Say: | Closing |
| • Please recap what we did today. | Review |
| $\bullet$ |  |

## Consult 4 Kids Lesson Plans

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Making 50 |
| Focus: | Operations |

## Materials:

| White boards | Decks of cards |
| :--- | :--- |
| Crayolas | Vocabulary Notebooks |
| Socks |  |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

Gain prior knowledge by asking students the following questions
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat")Problem of the Day <br> Casey Elementary School had a fundraiser. The 5th grade classrooms brought in the <br> money as listed on the table below. Which classroom brought in the most money? The <br> least? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in <br> with students repeatedly. <br> Check in about what is |
| :--- | :--- | :--- |
| happening and what they are |  |
| thinking. |  |

6. Person who wins (accuracy and time), collects both cards.
7. Play continues until all cards are gone.
8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee.

## Math Vocabulary

## Word for today: least

Description: Least is a word that is used to compare two or more items. For example if I have 4 Milky Way bars, 7 Snicker's bars, and 1 Twix, then I could say that Twix is the candy I have the least of. You wouldn't have to know how many I had, but you would know that I have fewer Twix than the other kind of candy. Least often means the smallest number. Create an entry in your Vocabulary Notebook for the word "least"

Vocabulary Notebook Sample:

| New WordLeast | My Description <br> Smaller than something else |
| :--- | :--- |
| Personal Connection <br> Of the two number: 6,793 and 9,113, <br> 6,793 is the least. | Drawing |

Activity
Making 50

## Materials

Game Board (attached to this lesson plan)
Sheet Protector
Vis-à-vis pen or crayola
Winning combinations: $32+3+15 ; 19+20+11 ; 13+11+26 ; 6+21+23 ; 10+17+13$ on the board.

## Directions:

1. Students work in pairs taking turns.
2. Place the Game Board in the sheet protector.
3. Player $\# 1$ finds 3 numbers that can go together to make a total of 50 . Numbers must be touching one another horizontally, vertically, diagonally or in an "L" shape.
4. Player \#1 circles the three numbers and writes the equation on a white board.
5. Player \#2 repeats, circling and writing his/her equation underneath the first one on the white board.
6. Play continues until players have found all of the possible combinations (there are 4).

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Consult 4 Kids Lesson Plans

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Making 50 Game Board

| 13 | 30 | 20 | 26 | 16 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | 11 | 14 | 13 | 11 | 25 |
| 19 | 27 | 5 | 33 | 29 | 10 |
| 14 | 10 | 17 | 6 | 23 | 21 |
| 32 | 3 | 3 | 17 | 31 | 16 |
| 11 | 15 | 29 | 5 | 33 | 29 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Making 75 |
| Focus: | Mathematical Reasoning |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
dice
decks of cards (jokers and face cards removed)

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

Gain prior knowledge by asking students the following questions
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Look at the list of numbers below. There is a pattern to these numbers. Determine what the pattern is and write the next three numbers. $6,12,18,24,30, \ldots,-\quad$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are |
| Fact Practice <br> Spokes on a Wheel <br> 1. Divide students into pairs. <br> 2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire). <br> 3. Have students choose to put a 6, 7 or 8 in the center circle. <br> 4. Student rolls two dice and adds the pips (dots). <br> 5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$. <br> 6. Process continues until all spokes have an equation. | Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |

## Math Vocabulary

## Word for Today: pattern

Description: Pattern refers to an organization of things into something that is predictable. If you understand the pattern of something, then you can make a guess as to what will come next. For example, in this pattern, $4,8,12,16,20,24,28,32$ $\qquad$ , we know that the next numbers would be $36,40,44$, and so on. Seeing and understanding a pattern is helpful in math.
Students complete the Vocabulary Notebook
Vocabulary Notebook Sample:

| New Word | My Description |
| :--- | :--- |
| pattern | Organized presentation that can replicated |
| Personal Connection <br> Although the pattern in the Sudoku puzzle <br> was complex John was able to figure it out. | Drawing |

## Activity <br> Making 75

## Materials:

Grid
Winning combinations: $30+25+20 ; 19+46+10 ; 28+22+25 ; 40+19+16 ; 33+27+$ 10

## Directions:

1. Students work in pairs to create a game board (like the one from yesterday) in which they have at least 4 ways that the players can make 75 .
2. (Discuss that they should begin with the 4 or so problems, determine where to place those numbers and then fill in the rest).
3. After completing the game board, pair exchanges with another pair and plays the game.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Consult 4 Kids Lesson Plans



## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans
Making 75 Game Board

| 13 | 30 | 20 | 26 | 16 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | 11 | 25 | 13 | 11 | 25 |
| 19 | 27 | 5 | 33 | 28 | 10 |
| 14 | 10 | 17 | 6 | 22 | 21 |
| 33 | 3 | 46 | 17 | 31 | 16 |
| 11 | 15 | 29 | 5 | 40 | 19 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\mathrm{h}} \& 5^{\mathrm{th}}$ Grade |
| Lesson Title: | Spill the Beans |
| Focus: | Operations |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Cards
Spill the Beans blank gameboard

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

## Gain prior knowledge by asking students the following questions

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day Find the sum of the numbers below $\begin{gathered} 546 \\ +329 \end{gathered}$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is <br> happening and what they are |
| Fact Practice <br> Target <br> 1. Divide students into trios. <br> 2. Each trio needs a deck of cards without face cards and jokers. <br> 3. Place the cards face up in a TicTac Toe Grid. <br> 4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1). <br> 5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide. <br> 6. Each card may be used only one time in the equation. <br> 7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 . <br> 8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck. | Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |

9. Player with the most cards at the end of the game win.

| Word for Today: sum |
| :--- |
| Description: Sum is the word we use to describe the total or the answer in addition problem. |

When you are told to find the sum, you should know that it means you are going to add. In the
problem 45 + 62, the sum is 107.
Write several problems on the board and have students find the sum.
Students should complete the Vocabulary Notebook
It is important to review
academic math vocabulary
Complete the Vocabulary
notebook for each word.

## Consult 4 Kids Lesson Plans



## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.


## Spill the Beans Game Board

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Spill The Beans 2 |
| Focus: | Multiples |

## Materials:

| White boards | Vocabulary Notebooks | Materials from yesterday |
| :--- | :--- | :--- |
| Crayolas | two, 12-sided dice for each pair |  |
| Socks | Product Hunt Work Sheet |  |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

Gain prior knowledge by asking students the following questions
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Solve the number sentence below. Then write a story problem to fit the number sentence. $386+298=$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Product Hunt <br> 1. Divide students into pairs. <br> 2. Each pair needs a Product Hunt sheet (attached to this lesson plans ). <br> 3. Player rolls two, 12-sided dice. <br> 4. Player multiplies the two numbers. <br> 5. If the product is not yet covered, then player may cover the product. <br> 6. Next player repeats steps 1-3. <br> 7. Winner is determined by who has the most numbers covered. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| Math Vocabulary |  |  |
| :--- | :---: | :---: |
| Word for Today: sum |  |  |
| Description: Review the word sum from yesterday. Give students several more |  |  |
| opportunities to find the sum of 4-5 problems that you write on the board. |  |  |
| Have students share the Vocabulary Notebooks in pairs, discussing the word, making any |  |  |
| additions or changes. |  |  |
| Vocabulary Notebook Sample: |  |  |
| New Word My Description <br> What is the sum of 8 and $9 ?$ Drawing |  |  |

## Activity <br> Spill the Beans

Review the game from yesterday and talk about the rules and how to play the game. Use the game materials from yesterday.

## Materials:

- Grid
- Beans (2 for each team)
- White board
- Small cup


## Directions:

1. Students work in pairs.
2. Students fill in the grid using the numbers $0-9$. In creating the board students should use only one each of the $5,6,7,8$, and 9 . The other numbers ( $0-4$ ) can be used more than once.
3. When board is complete, Player \#1 shakes up the two beans in the cup and spills them onto the game board.
4. Student then multiplies the numbers that the beans land on and subtracts the total from 100. (If a bean lands on a line or off the board, the bean may be spilled again) Second turn requires the player to subtract from the total.
5. First player to reach zero wins.

## Consult 4 Kids Lesson Plans



## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Eighteen Only |
| Focus: | Mathematical Reasoning |

## Materials:

White boards Vocabulary Notebooks
Crayolas decks of cards
Socks

| Opening |
| :--- |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |

## Content (the "Meat")

## Problem of the Day

The sum of two three digit numbers is 606. The numbers in the addends are $1,2,3,4,5$, and 6. What are the two addends? How do you know?

## Fact Practice

Draw!

1. Divide students into pairs and give each pair a deck of cards.
2. Remove the face cards and jokers from the deck of cards.
3. Shuffle the deck.
4. Decide who will go first.
5. First player draws two cards.
6. Student multiplies the cards.
7. Student writes his/her problem on the white board, writing a complete number sentence.
8. Students take turns drawing and creating problems.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

It is important to review

Word for Today: addends
Description: Addends are the numbers that you add together to find the sum or the total. Addends can have 1 digit or they can have 4-8 digits. There is no limit. The addends in this problem: $4,789+2,319=$ are the two numbers 4,789 and 2,319 . Write a problem with 3 addends, 2 addend, 4 addends.
Have students complete his/her Vocabulary Notebook.

Vocabulary Notebook Sample:

| New WordAddends | My Description <br> In the math problem $5+3=8$, the addends are <br> 5 and 3 |
| :--- | :--- |
| Personal Connection <br> What are the two addends in that addition <br> problem? | Drawing |

## 18 Only

## Materials:

Only game board (see below). Draw this on the board and have students replicate.


## Directions:

Students work in pairs.
Students create the game board above.
Students can only use the number 1-8.
Students will create 4 equations, all of which, when totaled, will $=18$.
$A+B+C+D=18$
$A+B+G+H=18$
$C+D+E+F=18$
$E+F+G+H=18$

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | 99 |
| Focus: | Basic Operations |

## Materials:

White boards Vocabulary Notebooks
Crayolas Decks of cards

Socks

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Describe two different stories that could account for the following number sentence. $413-218=195$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is <br> happening and what they are |
| Fact Practice Multiples <br> Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas (150 chart). <br> 1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice) <br> 2. Mark all multiples of the number and then pass off to the next person. <br> 3. Player may mark the same number. | thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: problem solving | It is important to review academic math vocabulary |

Description: Problem solving identified a mindset that you can have. When you have a problem solving mindset it means that you are going to find a way to solve a math problem or any other challenge that you might face. Problem solving means that you have to make "guesses" based on information that you have. Problem solving may allow you to come up with a variety of ways to get the answer. Your task then is to pick the problem solving strategy that makes the most sense to you.
Create an entry in your Vocabulary Notebook for the term "problem solving"
Vocabulary Notebook Sample:

| New Word | My Description <br> Thinking about challenges and trying to find <br> a solution |
| :--- | :--- |
| Personal Connection <br> When I saw the problem, I began to problem <br> solve. | Drawing |

## Activity <br> Ninety Nine

Materials: Deck of Cards (all cards including jokers)
Players: 2-4
Purpose of the game: Practice mental math in adding and subtracting, and game strategies. Total value of pile can never exceed " 99 ".

## Directions:

Each card counts for its face value except:

- 9's simply allow the player to pass, they are neither added to or subtracted from the total.
- 10 's are a -10 , requiring the player to subtract 10 from the total.
- the joker is " 99 " (you can play after the joker if you have a 9 , a 10 , or another joker)
- Aces count as 1 and all face cards are 10.

1. Each player is dealt 3 cards.
2. The first player plays a card and states the value of the card.
3. First player draws a card, keeping his/her hand at 3 cards.
4. The second player plays a card and states the value of the two cards added together (unless the second player plays a 9 , a 10 or a joker). Second player draws a card, keeping his/her hand at 3 cards.
5. For example, if player 1 plays a 7 , he/she would say 7 . Draws a card. If the second player plays an 8 , he/she would say 15 . Draws a card. If a third player plays a ten, he/she would say 5 , and so on. Draws a card.
6. The player to reach 99 with NO OTHER PLAYER being able to play a card, wins. Remember, after the pile reaches 99 , players can still play a 9,10 or joker.
7. When all three numerals are placed, the largest number wins.
often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice--Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | The Puzzler |
| Focus: | Math |

## Materials:

| White boards | Decks of cards for each pair |
| :--- | :--- |
| Crayolas | Vocabulary Notebooks |
| Socks |  |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills. |

## Gain prior knowledge by asking students the following questions

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?
What are the basic operations that you need to utilize during math?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Julie rolled 5 dice. She rolled a $4,2,6,5,3$. What is the largest possible number she can build if she uses all 5 digits? What is the smallest? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication War <br> - Divide students into pairs. Give each pair a deck of cards without face cards and jokers. <br> - Shuffle the deck and divide the cards evenly between the two players. <br> - On go, the players turn over the cards at the same time. <br> - Students multiply the 2 numbers that have been turned up. <br> - First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer. <br> - At the end of round, students may reshuffle the pile of cards that they have. <br> - Play can continue until one player has all cards or time has called. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |

## Math Vocabulary

## Word for Today: probable

Description: Probable is a very interesting word. It means what is "likely". A probable answer to a math problem is one that would make sense based on the information that you have. Probable is not an absolute, it is not a guarantee that your "guess" is accurate, but it is likely that you are correct. When we estimate we come up with a probable answer.
Create an entry in your Vocabulary Notebook for the word probable.
Vocabulary Notebook Sample:

| New Wordprobable | My Description |
| :--- | :--- |
| Likely to occur |  |

## Activity <br> The Puzzler

## Materials:

Circle shaped counters
Purpose of the game
Create two lines of 5 by moving only two markers.

## Directions:

Replicate the pattern with the counters that you see below.
Move only two markers to create 2 rows of 5 markers.


When finished, create your own puzzle challenge: hint-begin with the end configuration, and move 2-5 times to find a new configuration. Write down each move. Have a friend play your game.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Consult 4 Kids Lesson Plans



## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | The Puzzler 2 |
| Focus: | Mathematical Reasoning |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | Dice |
| Socks | toothpicks |


| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills. |
| Gain prior knowledge by asking students the following questions |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |
| What are the basic operations that you need to utilize during math? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day Write the following number in expanded notation. $426,387$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication Ladder <br> 1. Give each student a white board (include marker or crayola) <br> 2. Student should draw a ladder like the one below <br> 3. Have student roll 2 dice, total the pips and then multiply that number times each of the | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| numbers in the ladder, writing the total to the right of the number. |  |
| :---: | :---: |
| Math Vocabulary <br> Word for today: expanded form <br> Description: Expanded form is the way to write a number so that the person can see the place value of each of the numerals in the number. In our number system there are 10 numerals: $0,1,2,3,4,5,6,7,8$, and 9 . It is the place that the number is in that tells us its value. Expanded form makes that more clear. Example: 3,214,768 in expanded form is $3,000,000+200,000+10,000+4,000+700+60+8$. <br> Create an entry in your Vocabulary Notebook for the term "expanded form". <br> Vocabulary Notebook Sample: | It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. <br> When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). <br> Vocabulary Notebooks can be made from $1 / 2$ of a composition book. |
| Activity The Puzzler \#2 <br> Materials: <br> 9 toothpicks for each pair of students <br> Directions: <br> 1. Arrange the 9 tooth picks into the 3 triangles (see picture below). <br> 2. Once the arrangement is replicated, move only 2 toothpicks to create 5 triangles instead of 3 . | Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center. |

## Consult 4 Kids Lesson Plans



## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Mixed and Improper Fractions Made Easy |
| Focus: | Improper to Mixed Fractions |


| Materials: |  |  |
| :--- | :--- | :--- |
| White boards | Vocabulary Notebooks | Improper Fraction Cards in another pdf. |
| Crayolas | 6-sided dice; 12-sided dice |  |
| Socks | decks of cards |  |

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills in working with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called?
What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and how they apply?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> You are rolling one die and you are going to roll it 10 times. Each time you roll you record the number that you rolled. This is what you rolled: $3,5,2,5,1,1,6,4,4$, and 1 . You need to make a frequency table. What will it look like? | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $\begin{aligned} & 9 \times 4=36 \\ & 4 \times 9=36 \\ & 36 \div 4=9 \\ & 36 \div 9=4 \end{aligned}$ <br> Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families. | Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| Math Vocabulary |
| :--- |
| Word for Today: improper fraction |
| Description: Improper fraction is a term that refers to a fraction that has a numerator that is |
| larger or equal to the denominator. For example: |
| $\qquad \frac{9}{7}$ |$\frac{9}{4} \quad \frac{13}{6}$.

are all examples of improper fractions. The first represent 1 whole and $2 / 7$ of a second; 9/4 represents 2 whole and $1 / 4$ left over, and the final fraction $13 / 6$ represent 2 whole and $1 / 6$ of a third.
To change an improper fraction into a "proper" fraction you divide the numerator by the denominator and express the remainder as a fraction.

Create and entry in your Vocabulary Notebook for the term "improper fraction".
Vocabulary Notebook Sample:

| New Word <br> improper fraction | My Description <br> A fraction that has a numerator larger than the <br> denominator |
| :--- | :--- |
| Personal Connection <br> We had $\frac{14}{8}$ of the pie left over. | Drawing |

## Activity <br> Improper to Mixed

Materials: Improper Fraction Cards, Improper Fraction Answer Cards, Improper Fraction Answer Key

## Directions:

1. Group students in pairs.
2. Give each pair a set of materials.
3. Place Improper Fraction Answer Cards face up between the players.
4. Place Improper Fraction Cards face down in between students.
5. Player 1 draws a card that is an improper fraction.
6. Player 1 selects the Improper Fraction Answer Card that represents an equivalent.
7. If the answer is correct, Player 1 keeps both cards, if not, he/she returns card to the pile.
8. Player 2 then takes his/her turn.
9. Game is over when all cards are off the board.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Improper to Mixed |
| Focus: | Improper to Mixed Fractions |

## Materials:

White boards Vocabulary Notebooks
Crayolas Decks of cards
Socks

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? |
| What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and |
| how they apply? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

## Content (the "Meat")

## Problem of the Day

Look at the number written in expanded notation. Write a 7 digit number with these numbers.
$\begin{array}{lllllll}50 & 3,000 & 7,000,000 & 80,000 & 6 & 200 & 900,000\end{array}$
Fact Practice
Multiples
Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas (150 chart).

1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice)
2. Mark all multiples of the number and then pass off to the next person.
3. Player may mark the same number.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

## Math Vocabulary

## Word for Today: improper fraction

Description: Improper fraction is a term that refers to a fraction that has a numerator that is larger or equal to the denominator. For example:

$$
\begin{array}{lll}
\frac{9}{7} & \frac{9}{4} & \frac{13}{6}
\end{array}
$$

are all examples of improper fractions. The first represent 1 whole and $2 / 7$ of a second; 9/4 represents 2 whole and $1 / 4$ left over, and the final fraction $13 / 6$ represent 2 whole and $1 / 6$ of a third.
To change an improper fraction into a "proper" fraction you divide the numerator by the denominator and express the remainder as a fraction.
Review the entry in your Vocabulary Notebook for the term "improper fraction" with a peer. Edit as necessary.
Vocabulary Notebook Sample:

| New Word |  |
| :--- | :--- |
| Improper fraction | My Description <br> A fraction that has a larger numerator than <br> denominator |
| Personal Connection | Drawing |
| We bought 5 pizzas for the group. Each <br> pizza had 10 pieces. When lunch was over <br> we had $\frac{13}{10}$ left over after lunch. |  |

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

## Activity <br> Improper to Mixed

This is the same game as students played yesterday.

1. Review the game that students played yesterday.
2. Have students share how to play the game.
3. Have students play the game with new partners today.

Materials: Improper Fraction Cards, Improper Fraction Answer Cards, Improper Fraction Answer Key

## Directions:

1. Group students in pairs.
2. Give each pair a set of materials.
3. Place Improper Fraction Answer Cards face up between the players.
4. Place Improper Fraction Cards face down in between students.
5. Player 1 draws a card that is an improper fraction.
6. Player 1 selects the Improper Fraction Answer Card that represents an equivalent.
7. If the answer is correct, Player 1 keeps both cards, if not, he/she returns card to the pile.
8. Player 2 then takes his/her turn.
9. Game is over when all cards are off the board.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice—Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Simplest Form Concentration |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Double 9 Dominoes
Simplest Form Cards and Answer Cards—own pdf file

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? |
| What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and |
| how they apply? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

## .Content (the "Meat")

## Problem of the Day

Is this statement true? All squares are rectangles but all rectangles are not square. Tell why you think what you think.


## Fact Practice - Spots and Dots

There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.
Players sit across from each other.
Dominoes are between them, face (or spots) down.
Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is


> *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

Multiplication: $2 \times 3=6$

## Math Vocabulary

## Word for Today: simplest form

Description: Remind students that the term simplest form refers to the process of reducing a fraction into the simplest way of saying it. For example, why would you say that you ate 5/10 of a pizza when it would be clearer to say that you ate $1 / 2$ of the pizza? It makes it easier to simplify a fraction when you understand common factors. To simplify a fraction you can divide both the numerator and the denominator by the same number. Simplifying a fraction also requires that you understand equivalent fractions, two that are equal. Ultimately when you find the simplest form you are identifying at least 2 equivalent fractions.
Review the entry in your Vocabulary Notebook for the term "simplest form" with a peer. Edit if necessary.

## Vocabulary Notebook Sample:

| New Word | My Description <br> simplest form <br> when you have a part of a whole that will be <br> the easiest for you to understand, $1 / 2$ instead of <br> $\frac{26}{52}$ |
| :--- | :--- |
| Personal Connection <br> I have $1 / 2$ of the money that is on the <br> table. It is worth $\$ 3.50$. | Drawing |

## Activity <br> Simplest Form Concentration

Materials: Fraction Cards—each page a different color (ex. blue and yellow cardstock). One set of cards will be an improper fraction and the second set of cards will be the simplest form.
Directions:

1. Review the game that students played yesterday.
2. Have students share how to play the game.
3. Have students play the game with new partners today.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

Consult 4 Kids Lesson Plans

## Double 9 Dominoes




|  | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |  |  |
| $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| $\bullet$ | $\bullet$ |  |  |  |  |  |
| $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| $\bullet$ | $\bullet$ |  |  |  |  |  |





| $\bigcirc$ | $\begin{array}{ll} 0 & 0 \\ 0 & 0 \end{array}$ | $0^{0}{ }^{0}$ | $\bullet$ | $\bullet \bullet$ |
| :---: | :---: | :---: | :---: | :---: |
| $\bigcirc$ | - | -00 | -00 | -00 |
| - 0 | -0 | -00 | -00 | -00 |
| - - 0 | -0 0 | 000 | -0. | -0 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Factors In Common |
| Focus: | Fractions--Factors |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks two, 12-sided dice for each pair Product Hunt Work Sheet

Materials from yesterday (included in plan)

Opening
State the objective
Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and how they apply?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> To make chocolate chip cookies you need to have $1 \frac{1}{2}$ cups of white sugar and $3 / 4$ cup of brown sugar. How much sugar do you need to have in all? How do you know your answer is correct? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are |
| Fact Practice <br> Product Hunt <br> 1. Divide students into pairs <br> 2. Each pair needs a Product Hunt sheet (attached to this lesson plans ) <br> 3. Player rolls two, 12 -sided dice. <br> 4. Player multiplies the two numbers. <br> 5. If the product is not yet covered, then player may cover the product. <br> 6. Next player repeats steps 1-3. <br> 7. Winner is determined by who has the most numbers covered. | thinking. <br> Take advantage of any teachable moments <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher |


| $\quad$ Math Vocabulary |
| :--- |
| Word for Today: greatest common factor |
| Description: Review the term greatest common factor from yesterday. Ask students to |
| identify the "factors" in each of the following pairs of numbers and then identifying the common |
| factors and ultimately the largest common factor: |
| - 8 and 12 |
| - 21 and 35 |
| - 16 and 64 |
| - 9 and 54 |
| - 17 and 51 |

Have students share the Vocabulary Notebooks in pairs, discussing the word, making any additions or changes.

Vocabulary Notebook Sample:

| New Word |  |
| :--- | :--- |
| greatest common factor | My Description <br> $12=1,2,3,4,6$, and 12 <br> $15=1,3,5,15$ <br> greatest common factor is 3 |
| Personal Connection <br> The greatest common factor for 12 and 15 is <br> 3. | Drawing |

## Activity <br> Factors in Common

Materials: Factor Cards, Common Factor Game board, game tokens for each player Directions:

1. Review the game that students played yesterday.
2. Have students share how to play the game.
3. Have students play the game with new partners today.

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them (Aha!)

Consult 4 Kids Lesson Plans
Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

Consult 4 Kids Lesson Plans
Factors in Common

| 17 and 34 | 12 and 32 | 2 and 28 | 3 and 6 |
| :---: | :---: | :---: | :---: |
| 20 and 80 | 3 and 18 | 5 and 10 | 4 and 8 |
| 4 and 32 | 7 and 64 | 18 and 27 | 10 and 20 |
| 15 and 36 | 25 and 65 | 28 and 35 | 16 and 32 |
| 8 and 28 | 6 and 14 | 4 and 14 | 6 and 12 |

Consult 4 Kids Lesson Plans

Factors in Common


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Factors In Common 2 |
| Focus: | Multiplication--Factors |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Cards
Factors in Common Game Board and Cards (included in lesson plan)

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and how they apply?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Joey has a total of $\$ .90$. If Joey only has quarters, dimes and nickels, list the different combinations of coins that Joey could have. Explain how you know. | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Target <br> 1. Divide students into trios. <br> 2. Each trio needs a deck of cards without face cards and jokers. <br> 3. Place the cards face up in a TicTac Toe Grid. <br> 4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1) <br> 5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide. <br> 6. Each card may be used only one time in the equation. <br> 7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2. | happening and what they are thinking. <br> Take advantage of any teachable moments <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking When possible, engage students in a "teach to learn" opportunity and have the student become the teacher |




## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them (Aha!)

Consult 4 Kids Lesson Plans
Factors in Common

| 17 and 34 | 12 and 32 | 2 and 28 | 3 and 6 |
| :---: | :---: | :---: | :---: |
| 20 and 80 | 3 and 18 | 5 and 10 | 4 and 8 |
| 4 and 32 | 7 and 64 | 18 and 27 | 10 and 20 |
| 15 and 36 | 25 and 65 | 28 and 35 | 16 and 32 |
| 8 and 28 | 6 and 14 | 4 and 14 | 6 and 12 |

Consult 4 Kids Lesson Plans

Factors in Common


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Simplest Form Concentration 2 |
| Focus: | Fractions-Simplest Form |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
decks of cards
Simplest Form Cards and Answers in separate pdf file

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? |
| What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and |
| how they apply? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

## Content (the "Meat") <br> Problem of the Day

Freddie is planting flowers. He is going to plant 19 rows of flowers. Each row will have 13 plants in it. How many plants does Freddie need to purchase? How do you know?

## Fact Practice <br> Draw!

1. Divide students into pairs and give each pair a deck of cards
2. Remove the face cards and jokers from the deck of cards.
3. Shuffle the deck.
4. Decide who will go first.
5. First player draws two cards.
6. Student multiplies the cards.
7. Student writes his/her problem on the white board, writing a complete number sentence.
8. Students take turns drawing and creating problems.

> *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
Engage students in a "teach to learn", have the student become the teacher.

| Math Vocabulary |  | It is important to review academic math vocabulary often throughout the day. |
| :---: | :---: | :---: |
| Word for Today: simplest form |  |  |
| Description: The term simplest form refers to the process of reducing a fraction into the |  |  |
| it would be clearer to say that you ate $1 / 2$ of the pizza. It makes it easier to simplify a fraction |  | Complete the Vocabulary notebook for each word. |
|  |  | When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). |
| numerator and the denominator by the same number. Simplifying a fraction also requires that |  |  |
| you understand equivalent fractions, two that are equal. Ultimately when you find the simplest form you are identifying at least 2 equivalent fractions. |  |  |
| Have students complete his/her Vocabulary Notebook. |  |  |
| Vocabulary Notebook Sample: |  | be made from $1 / 2$ of a composition book. |
| New Word  <br>  simplest form | My Description |  |
|  | simplest form is the easiest way to understand a fraction |  |
| Personal Connection | Drawing |  |
| The simplest form of $\frac{17}{51}$ is $\frac{1}{3}$. | $\frac{17}{51}=\frac{1}{3}$ |  |
| Activity |  | Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center. |
| Simplest Form Concentrations |  |  |
| Materials: Simplest Form Cards, Simplest Form Answer Cards, Answer Sheet |  |  |
| Directions: |  |  |
| 1. Group students in pairs. |  |  |
| 2. Students place the Simplest Form Cards in a $3 \times 5$ grid, face down. |  |  |
| 3. Place the Simplest Form Answer Cards in a $3 \times 5$ grid, face down next to the first grid you made. |  |  |
| 4. Player 1 flips 2 cards, one from and a simplest form fraction that a again. | If the cards are a match, an improper fraction alent, player keeps both cards and draws |  |
| 5. If player does not find a match, he his/her turn. | the cards back over and Player 2 takes |  |



## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Equivalent Fractions |
| Focus: | Equivalent Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
dice
Fraction Cards and Fraction Answer Cards are in a separate file decks of cards (jokers and face cards removed)

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? |
| What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and |
| how they apply? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

## Content (the "Meat") <br> Problem of the Day

Mesa Verde School had a fundraiser for the library. All of the $4^{\text {th }}$ and $5^{\text {th }}$ grade classrooms participated. The table shows how much money each classroom raised. Which class raised the least? Which class raised the most? Explain your answer.

| Mr. Smith | $\$ 1,683$ |
| :--- | :--- |
| Ms. Jones | $\$ 1,597$ |
| Mr. Friend | $\$ 1,694$ |
| Mrs. Lanier | $\$ 1,639$ |

## Fact Practice

## Spokes on a Wheel

1. Divide students into pairs.
2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire).
3. Have students choose to put a 6, 7 or 8 in the center circle.
4. Student rolls two dice and adds the pips (dots).
5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$.

> *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.


$$
\frac{1}{2}=\frac{2}{4}=\frac{4}{8}
$$

If you were to reduce the order of the fractions, you could tell that they were equivalent because each could be divided by 2 . For example:

$$
\frac{4}{8}=\frac{2}{4}=\frac{1}{2}
$$

## Materials: Fraction cards, Fraction Answer Cards <br> Directions:

1. Group students in pairs.
2. Give each pair a set of materials.
3. Turn all fraction cards face down.
4. Arrange the Fraction Answer Cards face up in rows or a grid.
5. Player 1 draws a Fraction Card and locates an equivalent fraction in the Fraction Answer Cards.
6. Player covers the correct answer with his/her card.
7. Player 2 repeats the action.
8. Game is over when all equivalents are covered.


Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Fraction Rewrite |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Fraction cards (included in the plan)
Vocabulary Notebooks
Deck of cards

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and how they apply?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Judy has 143 kiwis and peaches in total. If Judy has 67 kiwis how many more peaches than kiwis does she have? Explain your answer. | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication War <br> - Divide students into pairs. Give each pair a deck of cards without face cards and jokers. <br> - Shuffle the deck and divide the cards evenly between the two players. <br> - On go, the players turn over the cards at the same time. <br> - Students multiply the 2 numbers that have been turned up. <br> - First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer. <br> - At the end of round, students may reshuffle the pile of cards that they have. <br> - Play can continue until one player has all cards or time has called. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> Engage students in a "teach to learn", have the student become the teacher. |


| Math Vocabulary |
| :--- |
| Word for Today: fraction |
| Description: Fraction is a word that means part or portion of the whole. We might say that |
| a person only knows "a fraction of the whole story", or that they are "eating only a fraction of |
| the pizza". We would know by these words that the person does not know everything or is |
| not eating pizza for one. In math, it is important to identify what part or portion or fraction is |
| known. For example if there are 5 facts to know the whole truth and you know 2 of those |
| facts, then you know $2 / 5$ of the truth, 2 of the 5 facts you would need to know if you knew it |
| all. Similarly if the pizza is cut into 8 pieces and you are eating 3 of those pieces, then you |
| are eating $3 / 8$ of the pizza, or 3 of the 8 possible pieces. |
| Create an entry in your Vocabulary Notebook for the word probable. |
| Vocabulary Notebook Sample: |
| New Word My Description <br> fraction part of a whole thing, less than all <br> Personal Connection I am eating $1 / 2$ of the pizza. <br> $\because \because \%$  |

$\longrightarrow$

## Activity <br> Fraction Rewrite

If you went to the bakery and they had your favorite cake and you bought it and took it home, obviously if you got to eat the whole cake yourself, you would have more cake than if you had to share it with someone. If your best friend came over there would now be 2 of you to eat the cake. If you decided to share, you would cut the whole cake into 2 pieces and you would each get to eat 1 of those 2 pieces, or $1 / 2$ of the cake. The top number, the numerator lets you know how many portions of the whole cake you are getting, while the bottom number, the denominator lets you know how many portions of the whole cake there are now. When you were eating the cake alone you had 1 portion of 1 whole cake or $1 / 1$. If you had 3 more friends come over, you would now need to divide the whole cake into 5 pieces, one each for you, your best friend, and the 3 other friends. Each of you would get 1 of the 5 pieces or $1 / 5$ of the cake. In the activity below, you are trying to decide which fraction represents the largest amount. To do that your first clue would be the denominator which answers the question, "how many portions did the whole get divided into"? If the numerator is 1 in both fractions, the smaller the denominator, the larger the portion for you. In other words, you have to share with fewer people so you each get more. However, it can get tricky when the numerator is NOT 1. For example, would you rather have $1 / 2$ of a dollar or $3 / 4$ of a dollar? If you just look at the denominator, you might think that you would like to have the $1 / 2$ dollar since you are sharing the dollar with only one other person. Half of a dollar is two quarters. $3 / 4$ of a dollar is 3 quarters ( 3 of the 4 it takes to make a whole dollar). The question is would you rather have $1 / 2$ of a dollar or $3 / 4$ of a dollar? Obviously $3 / 4$. In this case the dollar may have been divided or portioned into smaller pieces, but you got more of the pieces. When deciding whether or not the fraction is greater, less, or equal to another

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.
fraction, you have to look first at the denominator and then at the numerator before you make a decision. Hint: The closer the denominator and the numerator are to one another in value, the more of the whole thing you have.

Materials: Fraction cards, white board, crayolas (Cards are included in this lesson plan) Directions:

1. Draw a card with three fractions on it.
2. Rearrange the fractions so they are in order from the least to the greatest by writing the order on the white board.
3. If answer is correct, player keeps the card. If not, card gets turned back and player two takes turn.
4. Game is over when all cards are completed.


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them (Aha!)

Fraction Rewrite

| $\frac{1}{4}$ | $\frac{1}{2}$ | $\frac{5}{6}$ | $\frac{9}{14}$ | $\frac{4}{7}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{2}{5}$ | $\frac{11}{16}$ | $\frac{1}{6}$ | $\frac{1}{5}$ | $\frac{2}{9}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\frac{3}{8}$ | $\frac{3}{5}$ | $\frac{7}{10}$ | $\frac{1}{3}$ | $\frac{2}{5}$ | $\frac{1}{2}$ | $\frac{6}{7}$ | $\frac{2}{3}$ | $\frac{5}{6}$ | $\frac{1}{3}$ | $\frac{7}{18}$ | $\frac{5}{9}$ |
| $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{16}$ | $\frac{3}{4}$ | $\frac{11}{16}$ | $\frac{1}{2}$ | $\frac{3}{8}$ | $\frac{9}{10}$ | $\frac{1}{4}$ | $\frac{1}{5}$ | $\frac{7}{12}$ | $\frac{3}{10}$ |
| $\frac{2}{3}$ | $\frac{5}{7}$ | $\frac{7}{9}$ | $\frac{1}{8}$ | $\frac{1}{7}$ | $\frac{1}{2}$ | $\frac{4}{5}$ | $\frac{11}{12}$ | $\frac{9}{10}$ | $\frac{3}{7}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
| $\frac{2}{3}$ | $\frac{4}{5}$ | $\frac{3}{10}$ | $\frac{1}{3}$ | $\frac{2}{9}$ | $\frac{1}{6}$ | $\frac{7}{8}$ | $\frac{2}{9}$ | $\frac{1}{3}$ | $\frac{2}{3}$ | $\frac{1}{8}$ | $\frac{1}{6}$ |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Fraction Rewrite 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Decks of cards
Vocabulary Notebooks
Fraction Rewrite cards (from yesterday or included in today's plan

Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and how they apply?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Frank divides 537 by 7 and got 77 . Is his answer correct? Explain your answer. | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in |
| Fact Practice <br> Foreheader <br> 1. Divide students into trios. Give each trio a deck of cards without face cards and jokers. <br> 2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest. <br> 3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead. <br> 4. The referee multiplies the two numbers together and states the answer. <br> 5. Each player looks at the other person's exposed number and names his/her own number <br> 6. Person who wins (accuracy and time), collects both cards. <br> 7. Play continues until all cards are gone. <br> 8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee. | with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |



Vocabulary Notebook Sample:

| New Word <br> fraction | My Description part of a whole thing, a piece |
| :---: | :---: |
| Personal Connection <br> I ate $1 / 2$ of the pizza. I ate 4 of the 8 pizzas. | Drawing |

## Activity <br> Fraction Rewrite

Review with students the information from yesterday. Have them play the same game as yesterday after reviewing the purpose of the game. Have students partner with someone they did not play the game with yesterday.

Materials: Fraction cards, white board, crayolas (Cards are included in this lesson plan) Directions:

1. Draw a card with three fractions on it.
2. Rearrange the fractions so they are in order from the least to the greatest by writing the order on the white board.
3. If answer is correct, player keeps the card. If not, card gets turned back and player two takes turn.
4. Game is over when all cards are completed.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center


## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them (Aha!)

Fraction Rewrite

| $\frac{1}{4}$ | $\frac{1}{2}$ | $\frac{5}{6}$ | $\frac{9}{14}$ | $\frac{4}{7}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{2}{5}$ | $\frac{11}{16}$ | $\frac{1}{6}$ | $\frac{1}{5}$ | $\frac{2}{9}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\frac{3}{8}$ | $\frac{3}{5}$ | $\frac{7}{10}$ | $\frac{1}{3}$ | $\frac{2}{5}$ | $\frac{1}{2}$ | $\frac{6}{7}$ | $\frac{2}{3}$ | $\frac{5}{6}$ | $\frac{1}{3}$ | $\frac{7}{18}$ | $\frac{5}{9}$ |
| $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{16}$ | $\frac{3}{4}$ | $\frac{11}{16}$ | $\frac{1}{2}$ | $\frac{3}{8}$ | $\frac{9}{10}$ | $\frac{1}{4}$ | $\frac{1}{5}$ | $\frac{7}{12}$ | $\frac{3}{10}$ |
| $\frac{2}{3}$ | $\frac{5}{7}$ | $\frac{7}{9}$ | $\frac{1}{8}$ | $\frac{1}{7}$ | $\frac{1}{2}$ | $\frac{4}{5}$ | $\frac{11}{12}$ | $\frac{9}{10}$ | $\frac{3}{7}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
| $\frac{2}{3}$ | $\frac{4}{5}$ | $\frac{3}{10}$ | $\frac{1}{3}$ | $\frac{2}{9}$ | $\frac{1}{6}$ | $\frac{7}{8}$ | $\frac{2}{9}$ | $\frac{1}{3}$ | $\frac{2}{3}$ | $\frac{1}{8}$ | $\frac{1}{6}$ |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Equivalent Fractions 2 |
| Focus: | Equivalent Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Dice
$\qquad$

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about fractions? How is a fraction related to a whole? What is the top number in a fraction called? What is the bottom number of a fraction called? How do those words make sense-can you think about similar words and how they apply?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

## Content (the "Meat") <br> Problem of the Day

If the weight of a marble is measured in ounces and the weight of a textbook is measured in pounds, how would you measure a baseball? Explain your answer.

## Fact Practice

## Multiplication Ladder

1. Give each student a white board (include marker or crayola)
2. Student should draw a ladder like the one below


## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.
Take advantage of any teachable moments
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking When possible, engage students in a "teach to learn" opportunity and have the student become the teacher

| 3. Have student roll 2 dice, total the pips and then multiply that number times each of the numbers in the ladder, writing the total to the right of the number |  |
| :---: | :---: |
| Math Vocabulary <br> Word for today: equivalent fractions <br> Description: Ask students which they would rather have: <br> - $3 / 4$ of a pizza or $5 / 8$ of the pizza? <br> - $5 / 10$ of a dollar or $50 \$$ ? <br> - $2 / 3$ of a box of candy or $7 / 9$ if the same box <br> Help students work through these and come up with other questions. <br> Review entry in your Vocabulary Notebook for the term "equivalent fraction". Edit if necessary. <br> Vocabulary Notebook Sample: | It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. <br> When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book |
| Activity Equivalent Fractions <br> Materials: Fraction Cards, Fraction Answer Cards Directions: <br> 1. Review the game that students played yesterday. <br> 2. Have students share how to play the game. <br> 3. Have students play the game with new partners today. | Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center |


| Closing |
| :---: |
| Review |
| Say: <br> - Please recap what we did today. <br> - Did we achieve our objectives? |
| Debrief |
| Three Whats <br> Ask the following three what questions: <br> What was your key learning for the day? <br> What opportunities might you have to do this same thing in the "real world"? <br> What advice would you give to a "new" student getting ready to do this activity? |

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them (Aha!)

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below.

| Opening |
| :---: |
| State the objective |
| Today we are going to have fun playing games that we learned this week. |

## Content (the "Meat")

Activity
Today students will select the game from the week that they most want to play. Pairs can select different games. Game choices are:

- Improper to Mixed
- Simplest Form Concentration
- Factors in Common
- Equivalent Fractions
- Fraction Rewrite

|  |  |
| :--- | :--- |
|  | Closing |
| Say: | Review |
| - Please recap what we did today. |  |
| - Did we achieve our objectives? |  |

## Reflection (Confirm, Tweak, Aha!)

- Ask students to think about what they did today in math.
- Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Battle Ship |
| Focus: | Coordinates |

## Materials:

White boards
Vocabulary Notebooks
Crayolas Decks of cards
Socks

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and |
| s1uares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. |
| In what ways is geometry useful in your day-to-day life? |
| Today we are going to use grid paper in our activity. Have you ever worked with grid paper? What do you know about |
| determining coordinates on a grid? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

## Content (the "Meat")

## Problem of the Day

Jill's yard is 40 feet by 35 feet. If she purchases sod at $\$ 5.00$ per square feet, how much will the new lawn cost her?

## Fact Practice Multiples

Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas ( 150 chart).

1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice).
2. Mark all multiples of the number and then pass off to the next person.
3. Player may mark the same number.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Word for Today: volume |
| :--- |
| Description: Te term volume refers to the space inside a three-dimensional shape. It is |
| found by multiplying together height x length x width. |
| Create an entry in your Vocabulary Notebook for the word "volume". |
| Vocabulary Notebook Sample: |
| New Word My Description <br> volume the amount of space in a three dimensional <br> object  |
| What is the volume of that box? |

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

Fact Practice-Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

Battleship $4^{\text {th }}-5^{\text {th }}$


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Battle Ship 2 |
| Focus: | Coordinates |


| Materials: |  |  |
| :--- | :--- | :--- |
| White boards | Vocabulary Notebooks | Materials at end of the lesson plan |
| Crayolas | 6-sided dice; 12-sided dice |  |
| Socks | decks of cards |  |


| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and |
| s1uares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. |
| In what ways is geometry useful in your day-to-day life? |
| Today we are going to use grid paper in our activity. Have you ever worked with grid paper? What do you know about |
| determining coordinates on a grid? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

Content (the "Meat")

## Problem of the Day

Look at the chart below. Write in the value of $Y$ in the problem below for each of the $x$ values.
$60 \div x=y$

| $X$ | $Y$ |
| :---: | :---: |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 10 |  |

## Fact Practice

Fact Family
A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members:

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the

| $9 \times 4=36$ <br> $4 \times 9=36$ <br> $36 \div 4=9$ <br> $36 \div 9=4$ |  |  |
| :--- | :---: | :---: |
| Students should roll 2 dice and create a Fact Family by writing the members of the family on |  |  |
| the white board. Student should roll a total of 5 times, creating 5 Fact Families |  |  |
| Math Vocabulary |  |  |
| Word for Today: perimeter |  |  |
| Description: The term perimeter means the distance around a two dimensional shape. To <br> find the perimeter, you start and one spot, go around the outside edge of the shape, coming <br> back to where you started. We can measure a perimeter with a ruler or some other measuring <br> tool, conventional or non-conventional. You can also add the length of each side of a shape <br> together to find the perimeter. <br> Create and entry in your Vocabulary Notebook for the term "perimeter". <br> Vocabulary Notebook Sample: |  |  |
| New Word  <br> Personal Connection <br> He will walk the perimeter of the yard with <br> his dog. My Description |  |  |

## Activity <br> Battle Ship

Graphing coordinates is an important learning for students. In this activity, students will determine where to place battleships by rolling dice to identify the coordinates.

## Battle Ship <br> Directions:

1. Divide students into pairs. Give each player a set of 4 dice and a piece of grid paper.
2. Player rolls 2,3 or 4 dice to determine the coordinates of each battleship and marks the point on the graph. For example, if the player rolls 4 dice and by adding 3 of them together comes up with 11 , and the $4^{\text {th }}$ die is a 3 , he/she could marks the battleship at 311.
3. Player repeats step 1 until he/she has 5 battleships in play.
4. When both players have their boards marked, the game is ready to continue.
5. Players take turns guessing the location of the battleship. If the player misses, his/her opponent says "MISS", if the coordinate guessed is correct, then the player says "HIT". Guesses must be made stating the $x$ axis and then the $y$ axis.
6. Winner is the player that sinks all of the opponent's battleships.
student become the teacher.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Battleship Lesson $94^{\text {th }}-5^{\text {th }}$

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|  | 1 | 2 | 3 | 4 |  | 5 | 6 | 7 | 8 | 9 | 10 | 10 | 111 | 12 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Attributes |
| Focus: | Geometry--Attributes |

## Materials:

| White boards | Decks of cards |
| :--- | :--- |
| Crayolas | Vocabulary Notebooks |
| Socks | Attribute cards (at end of the lesson plan) |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

## Gain prior knowledge by asking students the following questions

What do you know about attributes? How is a single attribute related to a whole description of an item? When you are describing something, what are some of the easiest attributes to identify? Think about geometric shapes. What would be some obvious attributes of shapes? Why is understanding attributes important in math?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Mental math is when you do a math problem in your head without pencil and paper. If you were to find the answer to $83 \times 5$ by using mental math, how will you do this in the easiest way? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Fore-header <br> 1. Divide students into trios. Give each trio a deck of cards without face cards and jokers. <br> 2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest. <br> 3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead. <br> 4. The referee multiplies the two numbers together and states the answer. <br> 5. Each player looks at the other person's exposed number and names his/her own number. <br> 6. Person who wins (accuracy and time), collects both cards. <br> 7. Play continues until all cards are gone. <br> 8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in "teaching to learn". |

## Math Vocabulary

## Word for today: equilateral triangle

Description: A triangle is a three sided figure. It has three angles (points at which the lines forming the triangle meet.) These angles will add up to $180^{\circ}$ in ALL triangles. In an equilateral triangle, each angle is equal, so each angle equals $60^{\circ}$. An equilateral triangle is usually the first picture of a triangle that we have. They look like this:


Create an entry in your notebook for the term: equilateral triangle.
Vocabulary Notebook Sample:

| New Word <br> equilateral triangle | My Description <br> all the sides and angles are equal |
| :--- | :--- |
| Personal Connection <br> The musical instrument is an equilateral <br> triangle. | Drawing |

Activity
Attributes
This game was played yesterday. Ask students what they learned about playing the game that is helpful. Have students share strategies. Ask students to play in a trio that they did not play in yesterday.

## Attributes

## Directions:

1. Divide students into trios.
2. Give each trio a deck of Attribute Cards.
3. Shuffle the cars and deal them one at a time to each player, face up.
4. When one of the player sees 3 cards with a common attribute (even if the cards are in someone else's hand, the player calls, "Trio" and then names the common characteristic and picks up the three cards.
5. Play continues, dealing the cards one at a time, until all cards have been dealt and been picked up.
6. Player with the most cards wins.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

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| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Attributes 2 |
| Focus: | Attributes |

## Materials:

White boards
Crayolas
Socks

Attribute Cards (included in the plan)
Vocabulary Notebooks
Deck of cards

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about attributes? How is a single attribute related to a whole description of an item? When you are describing something, what are some of the easiest attributes to identify? Think about geometric shapes. What would be some obvious attributes of shapes? Why is understanding attributes important in math?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> John has 13 boxes of baseball cards. Each box has 250 cards. How many baseball cards does John have? Explain your answer. | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication War <br> - Divide students into pairs. Give each pair a deck of cards without face cards and jokers. <br> - Shuffle the deck and divide the cards evenly between the two players. <br> - On go, the players turn over the cards at the same time. <br> - Students multiply the 2 numbers that have been turned up. <br> - First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer. <br> - At the end of round, students may reshuffle the pile of cards that they have. <br> - Play can continue until one player has all cards or time has called. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in "teaching to learn". |


| Math Vocabulary |  |  |
| :--- | :--- | :---: |
| Word for Today: acute angle |  |  |
| Description: An angle is created when two line segments come together in a point. An |  |  |
| angle is measured in degrees. For example, right angle looks like the capital letter L. |  |  |
| There are $90^{\circ}$ in a right angle. The lines are perpendicular to one another. The word |  |  |
| "acute" describes an angle that is less than $90^{\circ}$. Instead of being perpendicular, the lines |  |  |
| are closer together. An acute angle looks something like this: |  |  |
| Create an entry in your Vocabulary Notebook for the word probable. |  |  |
| Vocabulary Notebook Sample: | New Word My Description <br> an angle less than 90 degrees  <br> acute angle Drawing <br> The greater than sign is an acute angle.  <br> Personal Connection  |  |

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

## Activity

## Attributes

An attribute is a characteristic or a trait. An attribute could be color, stripes, solids, spots, shapes, edges, corners and any other characteristic that identifies something. When we categorize something we look for shared characteristics or attributes.
The purpose of this activity is to determine what attributes can categorize objects-in other words, what attributes do the objects have in common.

## Attributes

## Directions:

1. Divide students into trios.
2. Give each trio a deck of Attribute Cards.
3. Shuffle the cars and deal them one at a time to each player, face up.
4. When one of the player sees 3 cards with a common attribute (even if the cards are in someone else's hand, the player calls, "Trio" and then names the common characteristic and picks up the three cards.
5. Play continues, dealing the cards one at a time, until all cards have been dealt and been picked up.
6. Player with the most cards wins.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" player getting ready to play this game so he/she could get all the blocks are completed.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

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| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's In A Shape? |
| Focus: | Geometry |


| Materials: |  |
| :--- | :--- |
| White boards | Vocabulary Notebooks |
| Crayolas | Dice |
| Socks | What's In A Shape Worksheet (at end of lesson plan) |


| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| Geometric shapes come in all shapes and sizes. Name some of the more common shapes? There are two dimensional or |
| flat shapes, and then there are three dimensional or shapes that have volume. For example, a triangle is a three-sided |
| shape and a pyramid is a three dimensional shape that begins with a triangle? What other 3-dimensional shapes do you |
| know? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

## Content (the "Meat")

Problem of the Day
Lorna is purchasing bags of oranges. She has decided that she needs 9 bags. Each bag weighs 2.4 pounds. How much do the bags weight together? How do you know?

## Fact Practice

## Multiplication Ladder

1. Give each student a white board (include marker or crayola).
2. Student should draw a ladder like the one below.

3. Have student roll 2 dice, total the pips and then multiply that number times each of the numbers in the ladder, writing the total to the right of the number.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

Math Vocabulary

## Word for today: obtuse angle

Description: an angle is created when two lines come together to create a point. If three angles are included in one shape, you have a triangle. In a triangle if you added the measurement of each angle, you would have $180^{\circ}$. An obtuse angle is an angle that has more than $90^{\circ}$. A right angle, which is shaped like an L , has $90^{\circ}$ in it. An obtuse angle has more than $90^{\circ}$, and less than $180^{\circ}$. An obtuse angle looks like this:


Vocabulary Notebook Sample:

| New Word <br> obtuse angle | My Description <br> more than a 90 degree angle |
| :--- | :--- |
| Personal Connection <br> When I opened the door as wide as I <br> could it formed an obtuse angle. | Drawing |

## Activity <br> What's In A Shape?

This activity was worked on yesterday. Ask students what they learned about playing the game that is helpful. Have students share strategies. Ask students to work in a different pairing today.

## What's In A Shape?

## Directions:

1. Divide students into pairs.
2. Give each pair a set of 6 shapes.
3. Have students cut the shape apart.
4. Give each pair a directions sheet.
5. Follow the directions and complete each challenge.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

## What's In A Shape Lesson $34^{\text {th }}-5^{\text {th }}$ Grade

Study the different shapes that you have been given and cut out. You have an Equilateral Triangle (E), Diamond (D), Square (S), Rhombus (R), Hexagon (H) , and Trapezoid (T).
These shapes have a relationship with one another and this is an exercise in which you will explore that relationship.
Solve the following pattern block equations. Write the letter the shape the equation makes in the blank.
$3 \times E=$ $\qquad$ $3 \times R=$ $\qquad$
$\mathrm{R}+\mathrm{E}=$ $\qquad$ $2 \times 1=$ $\qquad$

If the perimeter of the Equilateral Triangle $(\mathrm{E})$ is 3 units, what is the perimeter of

R $\qquad$ T $\qquad$ H $\qquad$
If the area of the Equilateral Triangle ( E ) is 1 square unit, what is the area of

## R

$\qquad$ T $\qquad$ H $\qquad$
Draw the following shapes by following the directions:

Use two different paper pattern: Make a shape with a perimeter of 8 units and an area of 8 square units.

Use three paper patterns. Make a shape with a perimeter of 7 units and an area of 5 square units.
Use five paper patterns. Make a shape with a perimeter of 6 units and an area of 6 square units.
Use three different paper patterns to make a shape with a perimeter of 11 and an area of 11 square units.

Just for fun, use the paper patterns to make a totally unique shape. Figure out the perimeter and the area.

## Consult 4 Kids Lesson Plans



| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's In A Shape? 2 |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
dice
What's In A Shape worksheet at the end of the lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills working with fractions. |

## Gain prior knowledge by asking students the following questions

Geometric shapes come in all shapes and sizes. Name some of the more common shapes? There are two dimensional or flat shapes, and then there are three dimensional or shapes that have volume. For example, a triangle is a three-sided shape and a pyramid is a three dimensional shape that begins with a triangle? What other 3-dimensional shapes do you know?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> If Sally makes $\$ 21.25$ each week when she helps Mrs. Jones with her housework, how much money will Sally make in 8 weeks? How do you know? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. |
| Fact Practice <br> Spokes on a Wheel <br> 1. Divide students into pairs. <br> 2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire). <br> 3. Have students choose to put a 6,7 or 8 in the center circle. <br> 4. Student rolls two dice and adds the pips (dots). <br> 5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$. <br> 6. Process continues until all spokes have an equation. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the |


 | Wath Voc |
| :--- |
| Wescription: A triangle is a three sided figure |
| an isosceles triangle there are two sides that are |
| the same. The third side and the third angle ar |
| triangle looks like this: |

Students complete the Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word |  |
| :--- | :--- |
| isosceles triangle | My Description <br> two sides and two angles equal |
| Personal Connection | Drawing |
| you have an isosceles triangle and you <br> know the value of the two angles that are <br> equal, you can calculate the degrees in <br> the third angle. |  |

## Activity

What's In A Shape?
Geometric shapes can take a variety of forms. When those geometric shapes are combined, you can look closely at patterns, fractions, and other relationships. You will have an opportunity to look at several shapes, each labeled with a letter. You will be instructed to think about these shapes in relationship with one another.

## What's In A Shape?

## Directions:

1. Divide students into pairs.
2. Give each pair a set of 6 shapes.
3. Have students cut the shape apart.
4. Give each pair a directions sheet.
5. Follow the directions and complete each challenge.
student become the teacher.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Consult 4 Kids Lesson Plans



## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

## What's In A Shape Lesson $34^{\text {th }}-5^{\text {th }}$ Grade

Study the different shapes that you have been given and cut out. You have an Equilateral Triangle (E), Diamond (D), Square (S), Rhombus (R), Hexagon (H) , and Trapezoid (T).

These shapes have a relationship with one another and this is an exercise in which you will explore that relationship.
Solve the following pattern block equations. Write the letter the shape the equation makes in the blank.
$3 \times E=$ $\qquad$ $3 \times R=$ $\qquad$
$\mathrm{R}+\mathrm{E}=$ $\qquad$ $2 \times 1=$ $\qquad$

If the perimeter of the Equilateral Triangle $(\mathrm{E})$ is 3 units, what is the perimeter of

## R

$\qquad$ T $\qquad$ H $\qquad$
If the area of the Equilateral Triangle ( E ) is 1 square unit, what is the area of

## R

$\qquad$ T $\qquad$ H $\qquad$
Draw the following shapes by following the directions:

Use two different paper pattern: Make a shape with a perimeter of 8 units and an area of 8 square units.

Use three paper patterns. Make a shape with a perimeter of 7 units and an area of 5 square units.
Use five paper patterns. Make a shape with a perimeter of 6 units and an area of 6 square units.
Use three different paper patterns to make a shape with a perimeter of 11 and an area of 11 square units.

Just for fun, use the paper patterns to make a totally unique shape. Figure out the perimeter and the area.


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Forward Ho |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks two, 12-sided dice for each pair Product Hunt Work Sheet

Materials from yesterday (included in plan)

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with geometry.

## Gain prior knowledge by asking students the following questions

Combining geometric shapes in a variety of different ways allows new shapes to be formed. For example, if you put two triangles together at the base, you will get a diamond.


What other shapes could you form is you added different geometric shapes together?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Find the product of $5.78 \times 3.1$. Explain, in a step by step manner, what you did to get the answer correct? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Product Hunt <br> 1. Divide students into pairs. <br> 2. Each pair needs a Product Hunt sheet (attached to this lesson plans ). <br> 3. Player rolls two, 12 -sided dice. <br> 4. Player multiplies the two numbers. <br> 5. If the product is not yet covered, then player may cover the product. <br> 6. Next player repeats steps 1-3. <br> 7. Winner is determined by who has the most numbers covered. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| Math Vocabulary |
| :--- |
| Word for Today: translation (slide) |
| Description: Translating or sliding a geometric shape occurs when a shape is moved or slid |
| new a new location without rotating it or flipping the shape. Here is an example: |
| Create an entry of the word "translation" in the vocabulary notebook. <br> Vocabulary Notebook Sample: <br> New Word <br> translation <br> Personal Connection Description <br> I will translate that picture to a new place on <br> the page. |

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans
Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

## START HERE



FINISH

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Forward Ho 2 |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks Cards
Forward Ho materials at end of lesson plan

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with geometry.

## Gain prior knowledge by asking students the following questions

Combining geometric shapes in a variety of different ways allows new shapes to be formed. For example, if you put two triangles together at the base, you will get a diamond.


What other shapes could you form is you added different geometric shapes together?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Jorge did the math problem below. When he did he got the following answer: 27.648. Is Jorge right? How do you know? $\begin{array}{r} 4.32 \\ \times 6.4 \\ \hline \end{array}$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any |
| Fact Practice <br> Target <br> 1. Divide students into trios. <br> 2. Each trio needs a deck of cards without face cards and jokers. <br> 3. Place the cards face up in a TicTac Toe Grid. <br> 4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1). <br> 5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide. | Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the |

6. Each card may be used only one time in the equation.
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck.
9. Player with the most cards at the end of the game win.

## Math Vocabulary

## Word for Today: scalene triangle

Description: A triangle is a three-sided figure with three angles. An equilateral triangle has three equal sides and three equal angles. An isosceles triangle has two sides and two angles that are equal. A scalene triangle has no sides and no angles that are equal. A scalene triangle looks like this:


Students should complete the Vocabulary Notebook
Vocabulary Notebook Sample:

| New Word | My Description |
| :--- | :--- |
| Scalene triangle |  |
| A triangle with no equal sides or angles |  |

## Activity <br> Forward Ho!

Basic shapes, squares, diamonds and triangles can be made by combining Tangram pieces. Working on this activity will strengthen students' understanding of spatial and geometric relationships.

## Forward Ho!

## Directions:

1. Divide students into pairs or trios.
2. Give each group a game board, a deck of cards with only aces, $2 \mathrm{~s}, 3, \mathrm{~s} 4 \mathrm{~s}$, and 5 s , a game token, and one set of Tangram pieces for each student.
3. Player draws a card and moves that many spaces on the game board. When he/she arrives at the space, he/she will see a shape.
4. He/she will now make the shape on the space with the number of Tangram pieces that is indicated by the card drawn. For example: player one draws a 2 and moves to a square that has a diamond. He/she must then make a diamond using 2 Tangram pieces.
student become the teacher.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
5. If player can make the shape with the required number of pieces, he/she can stay on the space, if he/she can't, then he/she must go back to where he/she was.
6. Winner is the first person to reach the finish line.

Note: more than one player can be on a space at the same time.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## START HERE



FINISH

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Flip, Slide, and Turn |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
decks of cards
Materials attached to the lesson plan-grid paper, shapes

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills in working with geometry.

## Gain prior knowledge by asking students the following questions

Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and squares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. In what ways is geometry useful in your day-to-day life?
What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?
How can you tell that you are on the right track for solving the problem?

| Content (the "Meat") |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: |



## Activity

## Flip, Slide and Turn

It is possible to move a geometric figure in three ways:
You can flip a figure over a line. When you do this it is called a reflection.
You can slide a figure along straight lines and this is called a translation.
You can turn a figure around a point and this is called a rotation.

## Flip, Slide, and Turn

## Directions:

1. Divide students into pairs.
2. Give each pair two pieces of graph paper and a set of four shapes.
3. Write the four questions on the board and make a copy for each pair.
4. Pair of students Cut out each of the shapes and then follows the directions with each piece-tracing the shape on the graph paper before the direction and then after following the direction, labeling the picture so you know if they flipped, slid, or turned the piece.
5. Pair should create a design on the second piece of graph paper, using flips, slides, and

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 20$ a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
turns.

## Closing <br> Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Flip, Slide and Turn Lesson $74^{\text {th }}$ - $5^{\text {th }}$


You can slide a figure along straight lines. Another word for slide is translation.
You can turn the figure around a point. Another word of turn is rotation.
You can flip the figure over a line. Another word for flip is reflection.
When you slide, turn, or flip a figure, does its size change? Does its shape change? The original figure and the final figure are the same.
Select one of the shapes below and trace it on grid paper. Then demonstrate how you can slide, flip, or turn the design.


Grid Paper


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Flip, Slide, and Turn 2 |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Double 9 Dominoes
Simplest Form Cards and Answer Cards—own pdf file

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with geometry. |
| Gain prior knowledge by asking students the following questions |
| Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and |
| sluares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. |
| In what ways is geometry useful in your day-to-day life? |
| What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? |
| How can you tell that you are on the right track for solving the problem? |

## Content (the "Meat")

## Problem of the Day

Melanie is dividing 246 by 31 . She thinks that the first number of her answer (the quotient) will be placed in the hundreds place. Is she correct? How do you know?

## Fact Practice

## Spots and Dots

There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

Players sit across from each other.
Dominoes are between them, face (or spots) down.
Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is


## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Multiplication: $2 \times 3=6$ |  |
| :--- | :--- |
| Word for Today: rotation (turn) |  |
| Description: Rotation means to turn around a center. The distance from the center to any <br> point on the shape stays the same. Every point makes a circle around the center. A rotation <br> is not like a slide in which you just move something over. It is not like a flip when you turn <br> something over or upside down. A rotation is turning the shape. An example could look like <br> this: |  |
| Create an entry for the word rotation in your Vocabulary Notebook. <br> Vocabulary Notebook Sample: |  |
| New Word <br> Notation | My Description |
| My necklace clasp continues a rotation |  |
| around my neck. |  |

Activity<br>Flip, Slide, and Turn

This activity was worked on yesterday. Ask students what they learned about playing the game that is helpful. Have students share strategies. Ask students to work in a different pairing today.

It is possible to move a geometric figure in three ways:
You can flip a figure over a line. When you do this it is called a reflection.
You can slide a figure along straight lines and this is called a translation.
You can turn a figure around a point and this is called a rotation.

## Flip, Slide, and Turn

## Directions:

1. Divide students into pairs.
2. Give each pair two pieces of graph paper and a set of four shapes.
3. Write the four questions on the board and make a copy for each pair.
4. Pair of students Cut out each of the shapes and then follows the directions with each piece-tracing the shape on the graph paper before the direction and then after following the direction, labeling the picture so you know if they flipped, slid, or turned the piece.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
5. Pair should create a design on the second piece of graph paper, using flips, slides, and turns.


Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans

## Double 9 Dominoes



Consult 4 Kids Lesson Plans


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Flip, Slide and Turn Lesson $74^{\text {th }} 5^{\text {th }}$


You can slide a figure along straight lines. Another word for slide is translation.
You can turn the figure around a point. Another word of turn is rotation.
You can flip the figure over a line. Another word for flip is reflection.
When you slide, turn, or flip a figure, does its size change? Does its shape change? The original figure and the final figure are the same.
Select one of the shapes below and trace it on grid paper. Then demonstrate how you can slide, flip, or turn the design.


Grid Paper

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below

| Opening |
| :---: |
| State the objective |
| Today we are going to have fun playing games that we learned this week. |

## Content (the "Meat")

Activity
Choice of 5 activities
Over the past 11 days students have played 5 different games. Give students an opportunity to play one of these games.
Battleship
Attributes
What's In A Shape?
Forward Ho!
Flip, Slide and Turn

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)

## Consult 4 Kids Lesson Plans

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Draw It |
| Focus: | Fractions |

## Materials:

| White boards | Activities at end of lesson plan |
| :--- | :--- |
| Crayolas | Vocabulary Notebooks |
| Socks | Deck of cards |

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? Explain a time when your understanding of fractions made handling a challenging situation easier. (Share with a friend if necessary).

| Content (the "Meat") |  |
| :--- | :--- |
| $\begin{array}{l}\text { Problem of the Day } \\ \text { Judy has } 125 \text { bananas and grapefruit in all. If she has 43 bananas, how many more } \\ \text { grapefruit than bananas does she have? Explain your answer. }\end{array}$ | $\begin{array}{l}\text { *Activity } \rightarrow \text { Teachable } \\ \text { Moment(s) throughout }\end{array}$ |
| During the lesson check in |  |
| with students repeatedly. |  |
| Check in about what is |  |$]$| happening and what they are |
| :--- |
| thinking. |

## Consult 4 Kids Lesson Plans

## Word for Today: denominator

Description: Denominator is a term that we use to describe the number of parts that a whole has been divided into. For example, the United States as a whole has 50 states. Each state would be $1 / 50$ states. The denominator lets you know how many parts there are if you look at the whole thing. Another example would be graham crackers. If you were to break graham crackers apart on the "lines" in the cracker only, you would have 4 parts and each single part would represent one of the four you would need to have the whole graham cracker. Ask students to talk with a peer and share other things that can be made into fractional parts.
Create an entry in your Vocabulary Notebook for the word denominator.
Vocabulary Notebook Sample:

| New Word picnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park |
| :--- | :--- |
| Personal Connection <br> I love to go to the park with my family. <br> We take a picnic lunch and barbeque hot <br> dogs. | Drawing |

## Activity

Fractions

## Drawing and Identifying Fractions

It is essential that students are able to identify and represent fractional parts. Be sure that students understand that the term fraction refers to a "part of a whole".

## Draw It

Directions:

1. Divide students into pairs.
2. Give each pair a white board and a deck of Draw It cards.
3. Player one draws a card and follows the directions, drawing onto the white board. If the drawing is correct, then the player keeps the card.
4. Player two repeats the process
5. Game is over when all cards have been drawn.
academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" player getting ready to play this game so he/she could get all the blocks are completed.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them

4th-5th Grade Draw It!

| Draw a pizza (circular). Mark and <br> color $1 / 2$ of the pizza. | Use any kind of drawing that you <br> would like to show the fraction $\frac{7}{10}$ |
| :--- | :--- |
|  |  |
| Draw 8 shapes. Color in $1 / 2$ of |  |
| them | Draw 12 shapes. Color in $\frac{2}{3}$ of the <br> shapes. |
| Use any kind of drawing you like to |  |
| show the fraction $\frac{3}{5}$ | Draw a picture of a board. Mark <br> and color in $3 / 4$ of board. |
| Draw 12 shapes and color in $\frac{1}{3}$ of | Draw a pizza. Divide it into 8 <br> pieces. Color in $\frac{3}{8}$ of the pizza. |
| them. | ( |

Use any kind of drawing that you would like to show the fraction $\frac{5}{10}$. What is another way you could write the number you have marked?

Draw 18 circles. Color in $\frac{5}{6}$ of the circles.

Draw a board. Show $\frac{4}{5}$ of the board.

Draw 10 dimes. Circle $\frac{9}{10}$ of them. How much money does this represent?

Draw 16 squares. Color in $\frac{7}{8}$ of them.

Draw a picture that illustrates $\frac{4}{9}$

## Consult 4 Kids Lesson Plans

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Draw It 2 |
| Focus: | Fractions |

## Materials:

| White boards | Decks of cards |
| :--- | :--- |
| Crayolas | Vocabulary Notebooks |
| Socks | Activity at end of lesson plan |



| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Grandma planted 15 rows of flowers with 9 plants in each row. How many plants does she have in all. Write the equation to explain your work? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Foreheader <br> 1. Divide students into trios. Give each trio a deck of cards without face cards and jokers. <br> 2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest <br> 3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead <br> 4. The referee multiplies the two numbers together and states the answer <br> 5. Each player looks at the other person's exposed number and names his/her own number <br> 6. Person who wins (accuracy and time), collects both cards <br> 7. Play continues until all cards are gone. <br> 8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking When possible, engage students in "teaching to learn". |
| Math Vocabulary <br> Word for today: numerator | It is important to review academic math vocabulary |

Description: Numerator is the terms we use to designate the top number in a fraction. This number tells you how many of the pieces you actually have. To continue with the United States, the denominator is 50 because that is how many total states there are. If we were to wonder what fraction would describe the number of states that touch the Pacific Ocean, we would need to include Alaska, Hawaii, California, Oregon and Washington, so we would show the fraction as $\frac{5}{50}$ which could be reduced to $\frac{1}{10}$. Another example would be a dozen eggs. The denominator would be 12, and depending on how many eggs we were going to eat for breakfast, say 5 , we would have a numerator of 5 and a denominator of 12 or a fraction that would look like this: $\frac{5}{12}$.
Create an entry in your notebook for the term: numerator
Vocabulary Notebook Sample:

| New Word $\quad$ picnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park |
| :--- | :--- |
| Personal Connection <br> I love to go to the park with my family. <br> We take a picnic lunch and barbeque hot <br> dogs. | Drawing |

## Activity

Fractions

Students participated in this activity yesterday. Ask students what they learned about playing fractions that is helpful. Have students share strategies. Ask students to work in a trio that they did not work in yesterday.

## Drawing and Identifying Fractions

It is essential that students are able to identify and represent fractional parts. Be sure that students understand that the term fraction refers to a "part of a whole".

## Draw It

## Directions:

1. Divide students into pairs.
2. Give each pair a white board and a deck of Draw It cards.
3. Player one draws a card and follows the directions, drawing onto the white board. If the drawing is correct, then the player keeps the card.
4. Player two repeats the process
5. Game is over when all cards have been drawn.
often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Consult 4 Kids Lesson Plans

| Closing |
| :---: |
| Review <br> Say: <br> - Please recap what we did today. <br> - Did we achieve our objectives? |
| Debrief <br> Three Whats <br> Ask the following three what questions: <br> What was your key learning for the day? <br> What opportunities might you have to do this same thing in the "real world"? <br> What advice would you give to a "new" student getting ready to do this activity. |

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them

| Draw a pizza (circular). Mark and <br> color $1 / 2$ of the pizza. | Use any kind of drawing that you <br> would like to show the fraction $\frac{7}{10}$ |
| :--- | :--- |
| Draw 8 shapes. Color in $1 / 2$ of <br> them | Draw 12 shapes. Color in $\frac{2}{3}$ of the <br> shapes. |
| Use any kind of drawing you like to <br> show the fraction $\frac{3}{5}$ | Draw a picture of a board. Mark <br> and color in $3 / 4$ of board. |
| Draw 12 shapes and color in $\frac{1}{3}$ of | Draw a pizza. Divide it into 8 <br> pieces. Color in $\frac{3}{8}$ of the pizza. |
| them. |  |

Use any kind of drawing that you would like to show the fraction $\frac{5}{10}$. What is another way you could write the number you have marked?

Draw 18 circles. Color in $\frac{5}{6}$ of the circles.

Draw a board. Show $\frac{4}{5}$ of the board.

Draw 10 dimes. Circle $\frac{9}{10}$ of them. How much money does this represent?

Draw 16 squares. Color in $\frac{7}{8}$ of them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Comparing Fractions |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
dice
Activity at the end of the lesson plan

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills working with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you |
| use your knowledge of fractions in the real world? Why is it important that items be divided equally? Explain a time when |
| your understanding of fractions made handling a challenging situation easier. (Share with a friend if necessary). |
| Sometimes there is more than one way to represent a fraction. For example, if you $1 / 2$ of a dollar or you have 2 of the 4 |
| quarters you need to make a dollar, or $\frac{2}{4}$ of a dollar, you still have $1 / 2$ of a dollar, half of what you need to have a whole |
| dollar. Give another example of equivalent fractions. |

## Content (the "Meat")

Problem of the Day
Ten soccer balls are on the playground. 6 of the balls are white, the others are red. Write a decimal to show the fraction of the soccer balls that are red.

## Fact Practice

## Spokes on a Wheel

1. Divide students into pairs
2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire)
3. Have students choose to put a 6,7 or 8 in the center circle
4. Student rolls two dice and adds the pips (dots)
5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$
6. Process continues until all spokes have an equation

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking When possible, engage students in a "teach to learn"

|  | opportunity and have the student become the teacher |
| :---: | :---: |
| Math Vocabulary <br> Word for Today: equivalent <br> Description: Equivalent is a term we use to say that two things are equal. It is a way of saying that what you find on one side of an equal sign will be the same value as what you find on the other side. For example, $4+6=2+8$. We know that this is true because both 4 +6 and $2+8=10$. In fractions it works the same way. For example, if you had $1 / 2$ dozen eggs or you had $\frac{6}{12}$ of the eggs, you still have the same number. The difference is that you are speaking about parts in fractions and whole items in the other. <br> Students complete the Vocabulary Notebook <br> Vocabulary Notebook Sample: | It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. <br> When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can |
| New Word My Description <br> picnic Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park | be made from $1 / 2$ of a composition book |
| Personal Connection Drawing <br> I love to go to the park with my family.  <br> We take a picnic lunch and barbeque hot  <br> dogs.  |  |
| Activity <br> Comparing Fractions <br> Comparison and Equivalent <br> Some fractions are equivalent and others are not. For example, if you have a dollar, you could have $1 / 2$ of a dollar by having $\frac{2}{4}$ of the quarters, $\frac{5}{10}$ of the dimes, $\frac{10}{20}$ of the nickels, and $\frac{50}{100}$ of the pennies. You would also have $1 / 2$ if you had $\frac{3}{6}, \frac{4}{8}$, or $\frac{7}{14}$. These fractions are all equivalent. When you compare fractions you can also discover that you have fractions that are not equivalent. For example, $\frac{3}{5}$ and $1 / 2$ are not equivalent. We can determine that if we look at the comparison below: $\square$ $\square$ <br> Today's activity will have students determine if fractions are equivalent and if they are not, then which is the largest fraction. | Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center |

## Consult 4 Kids Lesson Plans

## Compare

Directions

1. Divide the students into pairs
2. Give each pair a set of Compare cards
3. Player one draws a Compare card and determines if the fractions are equivalent and if not, which of the fractions is largest.
4. Player 2 checks Player 1's answer. If they agree play moves to Player 2. If not, then they discuss and determine the correct answer.
5. Player 2 then continues
6. Activity is over when all cards have been worked through.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them
$4^{\text {th }}$ and $5^{\text {th }}$ Grade-Compare



## Consult 4 Kids Lesson Plans

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\mathrm{t} \mathrm{t}}$ Grades |
| Lesson Title: | Comparing Fractions 2 |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | Dice |
| Socks | Activity at the end of the lesson plan |


| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? Explain a time when your understanding of fractions made handling a challenging situation easier. (Share with a friend if necessary). Sometimes there is more than one way to represent a fraction. For example, if you $1 / 2$ of a dollar or you have 2 of the 4 quarters you need to make a dollar, or $\frac{2}{4}$ of a dollar, you still have $1 / 2$ of a dollar, half of what you need to have a whole dollar. Give examples of equivalent fractions. Another thing we do with fractions is compare them to see which are the same, or which is greater or less than the others. If someone asked you if you would rather have $\frac{4}{5}$ of a dollar or $\frac{19}{20}$ it would be important for you to be able to compare so you would know what answer or decision to make.

| Content (the "Meat") |  |
| :--- | :--- |
| Study the symbols below. What are the next three symbols in this pattern? Explain your <br> answer. | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in <br> with students repeatedly. <br> Check in about what is <br> happening and what they are <br> thinking. |
| Multiplication Ladder |  |
| 1. Give each student a white board (include marker or crayola) |  |
| 2. Student should draw a ladder like the one below |  |
| Fact Practice | Take advantage of any <br> teachable moments <br> Stop the class and focus on a <br> student's key learning or <br> understanding. Ask open- <br> ended questions to <br> determine what the rest of <br> the group is thinking |

## Consult 4 Kids Lesson Plans

| When |
| :--- | :--- | :--- |

Comparison and Equivalent Activity
Some fractions are equivalent and others are not. For example, if you have a dollar, you
could have $1 / 2$ of a dollar by having $\frac{2}{4}$ of the quarters, $\frac{5}{10}$ of the dimes, $\frac{10}{20}$ of the nickels, and
50 保 $\frac{50}{100}$ of the pennies. You would also have $1 / 2$ if you had $\frac{3}{6}, \frac{4}{8}$, or $\frac{7}{14}$. These fractions are all equivalent. When you compare fractions you can also discover that you have fractions that are not equivalent. For example, $\frac{3}{5}$ and $1 / 2$ are not equivalent. We can determine that if we look at the comparison below:
$\square$

|  | 1 |  |
| :--- | :--- | :--- |

Today's activity will have students determine if fractions are equivalent and if they are not, then which is the largest fraction.

## Compare

Directions

1. Divide the students into pairs
2. Give each pair a set of Compare cards
3. Player one draws a Compare card and determines if the fractions are equivalent and if not, which of the fractions is largest.
4. Player 2 check Player 1's answer. If they agree play moves to Player 2. If not, then they discuss and determine the correct answer.
5. Player 2 then continues
6. Activity is over when all cards have been worked through.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them
$4^{\text {th }}$ and $5^{\text {th }}$ Grade-Compare
If the drawings below are candy,
which is more: $\frac{1}{3}$ or $\frac{3}{5}$ Would you rather have $\frac{5}{6}$ of a


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Simplest Form |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Cards
Activities at the end of this lesson plan

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? When we are looking at fractions we can see them in two ways-an actual representation of the whole or an equivalent fraction that may be easier to understand. For example, if you were told that you had $\frac{17}{51}$ of the 51 pieces of candy, you would know that this is 17 of the 51 total pieces. But if you were asked if you would rather have $\frac{17}{51}$ or of a candy that was tied for your favorite or $\frac{2}{5}$ of your other favorite, that would be more difficult to decide-especially if there were a lot more pieces than 5 of your other favorite candy. If we look at it in its simplest form $\frac{17}{51}$ is the same as $\frac{1}{3}$ of the candy, so knowing this might make it easier for you to determine which candy you would most want. Share a time when having "easier" to think about information has been helpful or might be helpful.


## Consult 4 Kids Lesson Plans

6. Each card may be used only one time in the equation
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck
9. Player with the most cards at the end of the game win

## Math Vocabulary

## Word for Today: simplest form

Description: Simplest form is a term we can use in a conversation about fractions that refers to a fraction that has been put in its simplest form, a form that is easier to understand. When we are using large fractions we reduce them to their simplest form so it is easier for us to understand what is being discussed. The simplest form of $\frac{60}{120}$ or $\frac{350}{700}$ or $\frac{9}{18}$ is $\frac{1}{2}$. Once you understand that you are discussing one half of something, it is easier for you to get your brain wrapped around the concept.
Students should complete the Vocabulary Notebook
Vocabulary Notebook Sample:

| New Word $\quad$ picnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park |
| :--- | :--- |
| Personal Connection <br> I love to go to the park with my family. We <br> take a picnic lunch and barbeque hot <br> dogs. | Drawing |

## Activity

## Fractions

## Simplest Form

A fraction is written in its simplest form when both the numerator and denominator are whole numbers and the common factor between the two is 1 .

When you look at the fractions $3 / 4$ and $\frac{4}{6}$ the factors for 3 are 1 and 3 , the factors for 4 are 1,2 , and 4. The only factor the 3 and 4 share is one, so the fraction is written in its simplest form. The factors for 4 are 1,2 and 4 , the factors for 6 are $1,2,3,6$. These two numbers have two common factors, 1 and 2. Therefore, $\frac{4}{6}$ is not in its simplest form. Do several problems on the board with students before having them begin to play the game.
the group is thinking When possible, engage students in a "teach to learn" opportunity and have the student become the teacher

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Consult 4 Kids Lesson Plans

## Simplest Form

Directions:

1. Divide the students into pairs
2. Give each pair a deck of Simplest Form cards and a white board
3. Player 1 draws a card writes the factors and determines which factor(s) the numerator and the denominator have and then, if the fraction is not in its simplest form, then player should write the simplest form.
4. Player 2 continues with the same process.
5. Game is over when all of the fractions are in the simplest forms

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them
$4^{\text {th- }}$ - $^{\text {th }}$ Grade Simplest Form

| $\frac{5}{10}$ | $\frac{6}{14}$ | $\frac{4}{20}$ | $\frac{20}{70}$ |
| :---: | :---: | :---: | :---: |
| $\frac{15}{25}$ | $\frac{12}{28}$ | $\frac{8}{32}$ | $\frac{18}{45}$ |
| $\frac{15}{18}$ | $\frac{24}{30}$ | $\frac{40}{80}$ | $\frac{36}{42}$ |
| $\frac{36}{45}$ | $\frac{28}{49}$ | $\frac{26}{39}$ | $\frac{48}{54}$ |
| $\frac{33}{44}$ | $\frac{40}{100}$ | $\frac{81}{90}$ | $\frac{64}{96}$ |


| $\frac{2}{4}$ | $\frac{3}{12}$ | $\frac{14}{21}$ | $\frac{4}{7}$ |
| :---: | :---: | :---: | :---: |
| $\frac{3}{8}$ | $\frac{5}{7}$ | $\frac{5}{9}$ | $\frac{9}{10}$ |
| $\frac{5}{6}$ | $\frac{51}{100}$ | $\frac{3}{10}$ | $\frac{6}{7}$ |
| $\frac{17}{51}$ | $\frac{6}{11}$ | $\frac{9}{31}$ | $\frac{5}{8}$ |
| $\frac{8}{17}$ | $\frac{14}{49}$ | $\frac{12}{48}$ | $\frac{15}{43}$ |

## Consult 4 Kids Lesson Plans

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{4 \mathrm{~h}} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Simplest Form 2 |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | two, 12-sided dice for each pair |
| Socks | Product Hunt Work Sheet |

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? When we are looking at fractions we can see them in two ways-an actual representation of the whole or an equivalent fraction that may be easier to understand. For example, if you were told that you had $\frac{17}{51}$ of the 51 pieces of candy, you would know that this is 17 of the 51 total pieces. But if you were asked if you would rather have $\frac{17}{51}$ or of a candy that was tied for your favorite or $\frac{2}{5}$ of your other favorite, that would be more difficult to decide-especially if there were a lot more pieces than 5 of your other favorite candy. If we look at it in its simplest form $\frac{17}{51}$ is the same as $\frac{1}{3}$ of the candy, so knowing this might make it easier for you to determine which candy you would most want. Share a time when having "easier" to think about information has been helpful or might be helpful.

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day | *Activity $\rightarrow$ Teachable Moment(s) throughout |
| If you had a triangle, trapezoid, pentagon, rectangle, parallelogram and you were given these clues, in what order with the shapes appear? | During the lesson check in with students repeatedly. |
| 1. The figure with the most sides is first. | Check in about what is |
| 2. The figure with just one pair of parallel sides is last. | happening and what they are |
| 3. The parallelogram is right after the triangle. | thinking. |
| 4. The figure with three sides is second. <br> 5. What is the order of the shapes? How do you know? | Take advantage of any teachable moments |
| Fact Practice | Stop the class and focus on a student's key learning or |
| Product Hunt | understanding. Ask openended questions to |
| 1. Divide students into pairs | determine what the rest of |

2. Each pair needs a Product Hunt sheet (attached to this lesson plans )
3. Player rolls two, 12 -sided dice.
4. Player multiplies the two numbers.
5. If the product is not yet covered, then player may cover the product.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

## Math Vocabulary

## Word for Today: factors

Description: Factors is a term used to designate the numerals that you multiply together to get a product. In fractions you have two different sets of factors, the factors for the numerator and the factors for the denominator. Remember that on set of factors is always 1 x the number itself. When you want to determine if a fraction is written in its simplest form, you can do this by listing the factors for the numerator and the factors for the denominator and canceling out the ones that are the same (with the exception of the 1), and then you can multiply the factors together again to determine what the simplest form of the fraction is. (Demonstrate this on the board)
Create an entry of the term factors in the vocabulary notebook.
Vocabulary Notebook Sample:

| New Word $\quad$ picnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park |
| :--- | :--- |
| Personal Connection <br> I love to go to the park with my family. We <br> take a picnic lunch and barbeque hot <br> dogs. | Drawing |

## Activity

## Fractions

## Simplest Form

A fraction is written in its simplest form when both the numerator and denominator are whole numbers and the common factor between the two is 1 .

When you look at the fractions $3 / 4$ and $\frac{4}{6}$ the factors for 3 are 1 and 3 , the factors for 4 are 1,2 , and 4. The only factor the 3 and 4 share is one, so the fraction is written in its simplest form. The factors for 4 are 1,2 and 4 , the factors for 6 are $1,2,3,6$. These two numbers have two common factors, 1 and 2. Therefore, $\frac{4}{6}$ is not in its simplest form.
the group is thinking When possible, engage students in a "teach to learn" opportunity and have the student become the teacher

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Consult 4 Kids Lesson Plans

## Simplest Form

Directions:

1. Divide the students into pairs
2. Give each pair a deck of Simplest Form cards and a white board
3. Player 1 draws a card writes the factors and determines which factor(s) the numerator and the denominator have and then, if the fraction is not in its simplest form, then player should write the simplest form.
4. Player 2 continues with the same process.
5. Game is over when all of the fractions are in the simplest forms

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them

## Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

$4^{\text {th }}$-5 ${ }^{\text {th }}$ Grade Simplest Form

| $\frac{5}{10}$ | $\frac{6}{14}$ | $\frac{4}{20}$ | $\frac{20}{70}$ |
| :---: | :---: | :---: | :---: |
| $\frac{15}{25}$ | $\frac{12}{28}$ | $\frac{8}{32}$ | $\frac{18}{45}$ |
| $\frac{15}{18}$ | $\frac{24}{30}$ | $\frac{40}{80}$ | $\frac{36}{42}$ |
| $\frac{36}{45}$ | $\frac{28}{49}$ | $\frac{26}{39}$ | $\frac{48}{54}$ |
| $\frac{33}{44}$ | $\frac{40}{100}$ | $\frac{81}{90}$ | $\frac{64}{96}$ |


| $\frac{2}{4}$ | $\frac{3}{12}$ | $\frac{14}{21}$ | $\frac{4}{7}$ |
| :---: | :---: | :---: | :---: |
| $\frac{3}{8}$ | $\frac{5}{7}$ | $\frac{5}{9}$ | $\frac{9}{10}$ |
| $\frac{5}{6}$ | $\frac{51}{100}$ | $\frac{3}{10}$ | $\frac{6}{7}$ |
| $\frac{17}{51}$ | $\frac{6}{11}$ | $\frac{9}{31}$ | $\frac{5}{8}$ |
| $\frac{8}{17}$ | $\frac{14}{49}$ | $\frac{12}{48}$ | $\frac{15}{43}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Improper and Mixed Fractions |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
decks of cards
Activity at the end of the lesson plan

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills in working with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? When we are looking at fractions we can see them in two ways-an actual representation of the whole or an equivalent fraction that may be easier to understand. For example, if you were told that you had $\frac{17}{51}$ of the 51 pieces of candy, you would know that this is 17 of the 51 total pieces. But if you were asked if you would rather have $\frac{17}{51}$ or of a candy that was tied for your favorite or $\frac{2}{5}$ of your other favorite, that would be more difficult to decide-especially if there were a lot more pieces than 5 of your other favorite candy. If we look at it in its simplest form $\frac{17}{51}$ is the same as $\frac{1}{3}$ of the candy, so knowing this might make it easier for you to determine which candy you would most want. Share a time when having "easier" to think about information has been helpful or might be helpful.

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Look at the sequence of numbers below. What number comes next? Explain your answer. $39,44,42,47,45,50,48$, $\qquad$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice Draw! <br> 1. Divide students into pairs and give each pair a deck of cards <br> 2. Remove the face cards and jokers from the deck of cards. <br> 3. Shuffle the deck. <br> 4. Decide who will go first. <br> 5. First player draws two cards. | happening and what they are thinking. <br> Take advantage of any teachable moments <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of |

## Consult 4 Kids Lesson Plans

6. Student multiplies the cards.
7. Student writes his/her problem on the white board, writing a complete number sentence.
8. Students take turns drawing and creating problems.

## Math Vocabulary

## Word for Today: improper fraction

Description: Improper fraction is a term we use to describe a fraction that has a numerator that is the same or larger than the denominator. In other words, you have as many or more parts that you need to make the whole thing. Let's think about pizza. Let's say you ordered 2 pizzas and both were cut into 10 equal slices. If someone ate $\frac{2}{10}$ or 2 of the 10 pieces of one pizza, and someone else ate $\frac{3}{10}$ or the second pizza, you would have 15 slices left over or $\frac{15}{10}$ 15 of the 10 pieces it would take to make one pizza. The fraction would be improper.
Have students complete his/her Vocabulary Notebook. Have students make up several scenarios in which this would be true.
Create a Notebook entry for the term: improper fraction
Vocabulary Notebook Sample:

| New Wordpicnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park |
| :--- | :--- |
| Personal Connection <br> I love to go to the park with my family. We <br> take a picnic lunch and barbeque hot <br> dogs. | Drawing |

## Activity

## Fractions

## Improper Fractions to Mixed Numbers

An improper fraction is a fraction that has a numerator larger or equal to the denominator. An example of an improper fraction is $\frac{8}{5}$. Since the numerator is 8 and the denominator is 5 , we know that there is one whole something and 3 extra pieces. To determine this you divide the denominator into the numerator (in this case it goes one time) and the remainder (the amount left over, in this case 3 ) is then written as a fraction: $\frac{3}{8}$, in other words 3 of the 8 parts you would need to have another whole. So the improper fraction $\frac{8}{5}$ can be written as the mixed number $1 \frac{3}{8}$
the group is thinking When possible, engage students in a "teach to learn" opportunity and have the student become the teacher

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Consult 4 Kids Lesson Plans

Demonstrate several of these problems with the students in preparation for the game.

## Improper Fractions

Directions:

1. Divide the students into pairs
2. Give each pair a deck of Improper Fractions cards and a white board
3. Player 1 draws a card completes the math to change the improper fraction into a mixed number.
4. Player 2 continues with the same process.
5. Game is over when all of the improper fractions are in the mixed number form.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them
$4^{\text {th }}-5^{\text {th }}$ Grade Improper Fractions

| $\frac{3}{2}$ | $\frac{5}{3}$ | $\frac{7}{4}$ | $\frac{9}{7}$ |
| :---: | :---: | :---: | :---: |
| $\frac{9}{2}$ | $\frac{15}{5}$ | $\frac{14}{5}$ | $\frac{16}{5}$ |
| $\frac{25}{8}$ | $\frac{35}{6}$ | $\frac{57}{10}$ | $\frac{91}{15}$ |
| $\frac{8}{6}$ | $\frac{12}{8}$ | $\frac{12}{3}$ | $\frac{21}{9}$ |
| $\frac{30}{12}$ | $\frac{13}{7}$ | $\frac{45}{36}$ | $\frac{60}{48}$ |


| $\frac{4}{4}$ | $\frac{15}{12}$ | $\frac{14}{6}$ | $\frac{23}{7}$ |
| :---: | :---: | :---: | :---: |
| $\frac{100}{24}$ | $\frac{3}{2}$ | $\frac{8}{3}$ | $\frac{17}{5}$ |
| $\frac{9}{2}$ | $\frac{21}{8}$ | $\frac{29}{6}$ | $\frac{31}{3}$ |
| $\frac{59}{7}$ | $\frac{122}{3}$ | $\frac{73}{6}$ | $\frac{13}{8}$ |
| $\frac{38}{17}$ | $\frac{78}{49}$ | $\frac{48}{48}$ | $\frac{12}{4}$ |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Improper to Mixed Fractions |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :---: |
| Crayolas | Double 9 Dominoes |
| Socks | Activity at the end of the lesson plan |

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? When we are looking at fractions we can see them in two ways-an actual representation of the whole or an equivalent fraction that may be easier to understand. For example, if you were told that you had $\frac{17}{51}$ of the 51 pieces of candy, you would know that this is 17 of the 51 total pieces. But if you were asked if you would rather have $\frac{17}{51}$ or of a candy that was tied for your favorite or $\frac{2}{5}$ of your other favorite, that would be more difficult to decide-especially if there were a lot more pieces than 5 of your other favorite candy. If we look at it in its simplest form $\frac{17}{51}$ is the same as $\frac{1}{3}$ of the candy, so knowing this might make it easier for you to determine which candy you would most want. Share a time when having "easier" to think about information has been helpful or might be helpful.

## Content (the "Meat")

## Problem of the Day

Complete the number line below. What number is $1 / 2$ way between 2.5 and 2.6 ?


Fact Practice
Spots and Dots
There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

Players sit across from each other.
Dominoes are between them, face (or spots) down.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking

## Consult 4 Kids Lesson Plans

Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is


Multiplication: $2 \times 3=6$

## Math Vocabulary

## Word for Today: mixed number

Description: Mixed number is a term we use to describe a whole number and a fraction that is used to describe how much of something you have. For example, if you have $1 \frac{1}{2}$ candy bars $11 / 2$ is a mixed number, you have 1 whole candy bar and $1 / 2$ of another candy bar. You have more than one, but less than 2. You could also have $\$ 10$ and $3 / 4$ of a dollar (this would be $75 \phi$, so you have 3 of the 4 quarter you would need to have a total of $\$ 11$. Have students share several things that they could have that would represented in a mixed number.

Create an entry for the term mixed number in your Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word $\quad$ picnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park |
| :--- | :--- |
| Personal Connection <br> I love to go to the park with my family. We <br> take a picnic lunch and barbeque hot <br> dogs. | Drawing |

## Activity

## Fractions

## Improper Fractions to Mixed Numbers

An improper fraction is a fraction that has a numerator larger or equal to the denominator. An example of an improper fraction is $\frac{8}{5}$. Since the numerator is 8 and the denominator is 5 , we know that there is one whole something and 3 extra pieces. To determine this you divide the denominator into the numerator (in this case it goes one time) and the remainder (the amount

When possible, engage students in a "teach to learn" opportunity and have the student become the teacher

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Consult 4 Kids Lesson Plans

left over, in this case 3 ) is then written as a fraction: $\frac{3}{8}$, in other words 3 of the 8 parts you would need to have another whole. So the improper fraction $\frac{8}{5}$ can be written as the mixed number $1 \frac{3}{8}$
Demonstrate several of these problems with the students in preparation for the game.

## Improper Fractions

## Directions:

1. Divide the students into pairs
2. Give each pair a deck of Improper Fractions cards and a white board
3. Player 1 draws a card completes the math to change the improper fraction into a mixed number.
4. Player 2 continues with the same process.
5. Game is over when all of the improper fractions are in the mixed number form.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them

## Double 9 Dominoes

|  | $\bullet$ |  | $\bullet$ | $\bullet$ |
| :--- | :--- | :--- | :--- | :--- |
| $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
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Consult 4 Kids Lesson Plans

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| $\bullet \bullet$ | $\bullet \bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| $\bullet \bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |  |
| $\bullet$ | $\bullet$ | $\bullet$ |  |  |  |




$4^{\text {th }}-5^{\text {th }}$ Grade Improper Fractions

| $\frac{3}{2}$ | $\frac{5}{3}$ | $\frac{7}{4}$ | $\frac{9}{7}$ |
| :---: | :---: | :---: | :---: |
| $\frac{9}{2}$ | $\frac{15}{5}$ | $\frac{14}{5}$ | $\frac{16}{5}$ |
| $\frac{25}{8}$ | $\frac{35}{6}$ | $\frac{57}{10}$ | $\frac{91}{15}$ |
| $\frac{8}{6}$ | $\frac{12}{8}$ | $\frac{12}{3}$ | $\frac{21}{9}$ |
| $\frac{30}{12}$ | $\frac{13}{7}$ | $\frac{45}{36}$ | $\frac{60}{48}$ |


| $\frac{4}{4}$ | $\frac{15}{12}$ | $\frac{14}{6}$ | $\frac{23}{7}$ |
| :---: | :---: | :---: | :---: |
| $\frac{100}{24}$ | $\frac{3}{2}$ | $\frac{8}{3}$ | $\frac{17}{5}$ |
| $\frac{9}{2}$ | $\frac{21}{8}$ | $\frac{29}{6}$ | $\frac{31}{3}$ |
| $\frac{59}{7}$ | $\frac{122}{3}$ | $\frac{73}{6}$ | $\frac{13}{8}$ |
| $\frac{38}{17}$ | $\frac{78}{49}$ | $\frac{48}{48}$ | $\frac{12}{4}$ |

## Consult 4 Kids Lesson Plans

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{4 \mathrm{~h}} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Movin' to Improper |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks | Activity at end of the lesson plan |
| :--- | :--- | :--- |
| Crayolas | 6-sided dice; 12-sided dice |  |
| Socks | decks of cards |  |

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills in working with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? When we are looking at fractions we can see them in two ways-an actual representation of the whole or an equivalent fraction that may be easier to understand. For example, if you were told that you had $\frac{17}{51}$ of the 51 pieces of candy, you would know that this is 17 of the 51 total pieces. But if you were asked if you would rather have $\frac{17}{51}$ or of a candy that was tied for your favorite or $\frac{2}{5}$ of your other favorite, that would be more difficult to decide-especially if there were a lot more pieces than 5 of your other favorite candy. If we look at it in its simplest form $\frac{17}{51}$ is the same as $\frac{1}{3}$ of the candy, so knowing this might make it easier for you to determine which candy you would most want. Share a time when having "easier" to think about information has been helpful or might be helpful. Talk about times when you have more than one whole thing.

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Jorge, Maria, Larry, and Martha finished the hot dog eating contest with the following times: $6.85,6.37,6.73$, and 6.53 seconds. Jorge finished last. Maria finished exactly 0.2 seconds faster than Larry. Who came in first? How do you know? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $9 \times 4=36$ <br> $4 \times 9=36$ <br> $36 \div 4=9$ | Take advantage of any teachable moments Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking |

## Consult 4 Kids Lesson Plans

$36 \div 9=4$
Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families

## Math Vocabulary

## Word for Today: multiplication

Description: Multiplication is the term that we use to describe repeated addition. It requires that you have a grid that has equal columns of items-in other words that each row has the same number of items in it. Then you simply multiply the number of rows times the number of columns and you know how many individual items you have. It makes addition easier when you get into larger numbers. Multiplication is an operation that we utilize with fractions, especially if we are looking at factors to know if the fraction is in its simplest form, but also when we change a mixed number into a fraction. Practice several on the board.
Create and entry in your Vocabulary Notebook for the term "multiplication".
Vocabulary Notebook Sample:

| New Word $\quad$ picnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball <br> games, family fun at the park |
| :--- | :--- |
| Personal Connection <br> I love to go to the park with my family. We <br> take a picnic lunch and barbeque hot <br> dogs. | Drawing |

## Activity

## Fractions

## Mixed Numbers to Improper Fractions

Just as it is important for the student to understand how to change an improper fraction to a mixed number, it is important that a student know how to change a mixed number to an improper fraction. To change a mixed number to an improper fraction multiply the whole number times the denominator and find the product. Then to that product, add the numerator. You now have the improper fraction. The numerator is the total you have just found and then put the denominator that you have had as the denominator, it does not change. So, in the mixed number $3 \frac{1}{3}$ you would first say 3 (the whole number) $\times 3$ (the denominator $=9+1$ (the numerator) for a total of 10 , over the denominator of 3 so the improper fraction looks this way: $\frac{10}{3}$.
Demonstrate several of these problems with students, helping them to understand how to play the game.

When possible, engage students in a "teach to learn" opportunity and have the student become the teacher

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Consult 4 Kids Lesson Plans

## Movin' to Improper

## Directions:

1. Divide the students into pairs
2. Give each pair a deck of Movin' to Improper cards and a white board
3. Player 1 draws a card completes the math to change the mixed number into an improper fraction.
4. Player 2 continues with the same process.
5. Game is over when all of the improper fractions are in the mixed number form.

|  | Closing |
| :--- | :--- |
|  | Review |

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them
$4^{\text {th }}$ - th $^{\text {h }}$ Grade Movin' to Improper

| $1 \frac{1}{2}$ | $1 \frac{2}{3}$ | $1 \frac{3}{4}$ | $1 \frac{2}{7}$ |
| :---: | :---: | :---: | :---: |
| $4 \frac{1}{2}$ | $3 \frac{2}{3}$ | $2 \frac{4}{5}$ | $3 \frac{1}{5}$ |
| $3 \frac{1}{8}$ | $5 \frac{5}{6}$ | $5 \frac{7}{20}$ | $6 \frac{1}{15}$ |
| $1 \frac{5}{6}$ | $1 \frac{4}{5}$ | $3 \frac{7}{8}$ | $2 \frac{4}{9}$ |
| $2 \frac{8}{12}$ | $1 \frac{5}{8}$ | $4 \frac{3}{4}$ | $3 \frac{3}{10}$ |


| $5 \frac{3}{7}$ | $3 \frac{3}{4}$ | $2 \frac{2}{6}$ | $3 \frac{2}{3}$ |
| :---: | :---: | :---: | :---: |
| $4 \frac{1}{24}$ | $1 \frac{1}{2}$ | $2 \frac{2}{3}$ | $3 \frac{2}{5}$ |
| $4 \frac{1}{2}$ | $2 \frac{7}{8}$ | $4 \frac{5}{6}$ | $10 \frac{1}{3}$ |
| $8 \frac{4}{7}$ | $4 \frac{2}{3}$ | $11 \frac{1}{6}$ | $1 \frac{5}{8}$ |
| $2 \frac{4}{7}$ | $3 \frac{7}{9}$ | $4 \frac{2}{5}$ | $3 \frac{1}{4}$ |

## Consult 4 Kids Lesson Plans

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Movin' to Improper 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Decks of cards
Activity at the end of the lesson plan

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills in working with fractions.

## Gain prior knowledge by asking students the following questions

We have spent a great deal of time this past few days talking about fractions. Share with the group your understanding of the following:

> improper fractions
mixed number
numerator
denominator
equivalent fractions
simplest form

## Content (the "Meat")

## Problem of the Day

Millie collected 3,478 baseball cards. Mark collected 2,976 baseball cards. How many cards do they have all together? How do you know?

## Fact Practice <br> Multiples

Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas (150 chart).

1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice)
2. Mark all multiples of the number and then pass off to the next person.
3. Player may mark the same number.
*Activity $\rightarrow$ Teachable
Moment(s) throughout
During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking When possible, engage

## Consult 4 Kids Lesson Plans

|  |  | students in a "teach to learn" opportunity and have the student become the teacher |
| :---: | :---: | :---: |
| Word for Math Vocabulary |  | It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. <br> When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book |
|  |  |  |
| Description: Te term like denominators ref same. When we think about parts of a whole to apple and oranges to oranges, not apples that in order to compare fractions, they must | s to two or more denominators that are the or a fraction, it is important to compare apples oranges. This is a metaphorical way of saying e written with the same or like denominators. |  |
| To find like denominators we must find equival expressed with a different denominator. If I in the other, I need to think about $\frac{2}{4}$ of a dolla dollar, or one dollar and a quarter. Share oth Create an entry in your Vocabulary Noteboo Vocabulary Notebook Sample: | ent fractions to the fraction we have, but ve $1 / 2$ of a dollar in one pocket and $\frac{3}{4}$ of a dollar and $\frac{3}{4}$ of a dollar to know that I have $\frac{5}{4}$ of a r examples with students. for the term "like denominators". |  |
| New Word <br> picnic | My Description <br> Hot dogs, mustard, catsup, drinks, ball games, family fun at the park |  |
| Personal Connection | Drawing |  |
| I love to go to the park with my family. We take a picnic lunch and barbeque hot dogs. |  |  |

## Consult 4 Kids Lesson Plans

## Activity

Fractions

## Mixed Numbers to Improper Fractions

Just as it is important for the student to understand how to change an improper fraction to a mixed number, it is important that a student know how to change a mixed number to an improper fraction. To change an mixed number to an improper fraction multiply the whole number times the denominator and find the product. Then to that product, add the numerator. You now have the improper fraction. The numerator is the total you have just found and then put the denominator that you have had as the denominator, it does not change. So, in the mixed number $3 \frac{1}{3}$ you would first say 3 (the whole number) $\times 3$ (the denominator $=9+1$ (the numerator) for a total of 10 , over the denominator of 3 so the improper fraction looks this way: $\frac{10}{3}$.
Demonstrate several of these problems with students, helping them to understand how to play the game.

## Movin' to Improper

## Directions:

1. Divide the students into pairs
2. Give each pair a deck of Movin' to Improper cards and a white board
3. Player 1 draws a card completes the math to change the mixed number into an improper fraction.
4. Player 2 continues with the same process.
5. Game is over when all of the improper fractions are in the mixed number form.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center

## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.

## Consult 4 Kids Lesson Plans

2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them

Fact Practice-Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

$4^{\text {th }}$ - $5^{\text {th }}$ Grade Movin' to Improper

| $1 \frac{1}{2}$ | $1 \frac{2}{3}$ | $1 \frac{3}{4}$ | $1 \frac{2}{7}$ |
| :---: | :---: | :---: | :---: |
| $4 \frac{1}{2}$ | $3 \frac{2}{3}$ | $2 \frac{4}{5}$ | $3 \frac{1}{5}$ |
| $3 \frac{1}{8}$ | $5 \frac{5}{6}$ | $5 \frac{7}{20}$ | $6 \frac{1}{15}$ |
| $1 \frac{5}{6}$ | $1 \frac{4}{5}$ | $3 \frac{7}{8}$ | $2 \frac{4}{9}$ |
| $2 \frac{8}{12}$ | $1 \frac{5}{8}$ | $4 \frac{3}{4}$ | $3 \frac{3}{10}$ |

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| $5 \frac{3}{7}$ | $3 \frac{3}{4}$ | $2 \frac{2}{6}$ | $3 \frac{2}{3}$ |
| :---: | :---: | :---: | :---: |
| $4 \frac{1}{24}$ | $1 \frac{1}{2}$ | $2 \frac{2}{3}$ | $3 \frac{2}{5}$ |
| $4 \frac{1}{2}$ | $2 \frac{7}{8}$ | $4 \frac{5}{6}$ | $10 \frac{1}{3}$ |
| $8 \frac{4}{7}$ | $4 \frac{2}{3}$ | $11 \frac{1}{6}$ | $1 \frac{5}{8}$ |
| $2 \frac{4}{7}$ | $3 \frac{7}{9}$ | $4 \frac{2}{5}$ | $3 \frac{1}{4}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grade |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below

## Opening <br> State the objective

Today we are going to have fun playing games that we learned this week.

| Content (the "Meat") |
| :--- |
| Activity |
| Today is review day. Students will be able to select from the Fraction Games you played for the last 10 days. Ask students |
| to select from: |
|  |
| Draw It |
| Compare |
| Simplest Form |
| Improper Fractions |
| Movin' to Improper |


|  | Closing |
| :--- | :--- |
| Say: | Review |

- Please recap what we did today.
- Did we achieve our objectives?


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one

## Consult 4 Kids Lesson Plans

particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Fraction Review |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Deck of cards

Activities at end of lesson plan
Vocabulary Notebooks
Socks (use as erasers)

Opening
State the objective
Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? What is an improper fraction? What is a mixed number? What are equivalent fractions?

## Content (the "Meat")

## Problem of the Day

Susie is dividing 246 by 31 . She thinks that the first digit of the quotient is in the tens place. Is she correct? Explain your thinking.

## Fact Practice

## Multiplication War

- Divide students into pairs. Give each pair a deck of cards without face cards and jokers.
- Shuffle the deck and divide the cards evenly between the two players
- On go, the players turn over the cards at the same time
- Students multiply the 2 numbers that have been turned up
- First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer
- At the end of round, students may reshuffle the pile of cards that they have
- Play can continue until one player has all cards or time has called


## Math Vocabulary

Word for Today: numerator
*Activity $\rightarrow$ Teachable Moment(s) throughout
During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in "teaching to learn".
It is important to review academic math vocabulary

Description: A numerator is the top number of a fraction. It is the number that tells you how many of the parts you have. It names those. Ask students to write the following fractions: Fraction with a numerator less than the denominator. Fraction with a numerator larger than the denominator. Two fractions that have the same numerator but different denominators.
Review the entry in your Vocabulary Notebook for the word numerator with a friend. Use the word numerator in a sentence.
Vocabulary Notebook Sample:

| New Word | My Description <br> numerator <br> A numerator is the top number of a <br> fraction. It tells how many parts I have. |
| :--- | :--- |
| Personal Connection | Drawing |
| When I eat pizza, I start with $\frac{1}{8 .}$ |  |

## Activity

Fractions

## Fractions

We have spent some time working with fractions. Review the following with students: improper fractions $\frac{9}{7}$
mixed numbers $1 \frac{2}{7}$
equivalent fractions $\frac{2}{4}=\frac{1}{2}$
simplest form $\frac{4}{6}=\frac{2}{3}$
Review each of these problems in preparation for the game they will play today and tomorrow.

## Fraction Review

## Directions:

The object of the game is to get 4 tokens in a row.

1. Divide students into pairs. Give each pair a game board and set Double 9 Dominoes
2. Place the dominoes face down to the right of the game board.
3. Player 1 draws 3 dominoes and locates the correct description on the board (improper fraction, simplest form, proper fraction, equivalent) for one or more of his/her dominoes. Once played, the player draws enough dominoes to have 3 in hand.
4. Player 2 then repeats the process.
5. Game is over when all answers are covered.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.

Consult 4 Kids Lesson Plans


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}$-5 th Grade Review


Proper
Imp. = Improper
Equivalent = Equal
Simplest Form = SF

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Fraction Review 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks (for erasers)

Decks of cards
Vocabulary Notebooks
Activity at end of lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? Why is it important that items be divided equally? Write a fraction on a piece of paper or a white board. Share with a friend the information about the fraction, including the numerator and the denominator.

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Study the two problems. Are the quotients the same or different. Explain how you know. $4,900 \div 700=$ $490 \div 70=$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Foreheader <br> 1. Divide students into trios. Give each trio a deck of cards without face cards and jokers. <br> 2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest <br> 3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead <br> 4. The referee multiplies the two numbers together and states the answer <br> 5. Each player looks at the other person's exposed number and names his/her own number <br> 6. Person who wins (accuracy and time), collects both cards <br> 7. Play continues until all cards are gone. <br> 8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee | happening and what they are <br> thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in "teaching to learn". |
| Math Vocabulary | It is important to review |

## Word for today: denominator

Description: Denominator is a term we use to describe the number of pieces that there are in the whole. The denominator lets the person know how many parts it would take to have the whole thing as well. Write the following fractions: a fraction that has a denominator that is an even number; a fraction that has a denominator that is an odd number; a fraction that has a denominator that is smaller than the numerator.
Review entry in your notebook for the term: denominator. Review with a friend and use the word in a sentence as well.
Vocabulary Notebook Sample:

| New Word | My Description <br> denominator |
| :--- | :--- |
| The bottom number of a fraction; the total <br> number of pieces |  |
| When you have quarters, the denominator <br> is 4 when you think about a dollar. | Drawing |

## Activity <br> Fractions

## Fractions

We have spent some time working with fractions. Review the following with students:
improper fractions $\frac{9}{7}$
mixed numbers $1 \frac{2}{7}$
equivalent fractions $\frac{2}{4}=\frac{1}{2}$
simplest form $\frac{4}{6}=\frac{2}{3}$
Review each of these problems in preparation for the game they will play today and tomorrow.
Fraction Review

## Directions:

## The object of the game is to get 4 tokens in a row.

1. Divide students into pairs. Give each pair a game board and set Double 9 Dominoes
2. Place the dominoes face down to the right of the game board
3. Player 1 draws 3 dominoes and locates the correct description on the board (improper fraction, simplest form, proper fraction, equivalent) for one or more of his/her dominoes. Once played, the player draws enough dominoes to have 3 in hand.
4. Player 2 then repeats the process
5. Game is over when all answers are covered
academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}$-5 th Grade Review


Proper
Imp. = Improper
Equivalent = Equal
Simplest Form = SF

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Check It Off |
| Focus: | Fractions |


| Materials: |  |
| :--- | :--- |
| White boards | Vocabulary Notebooks |
| Crayolas | Socks (for erasers) |
| Dice | Activity at the end of the lesson plan |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills working with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you |
| use your knowledge of fractions in the real world? Why is it important that items be divided equally? Sometimes there is |
| more than one way to represent a fraction. For example, if you $1 / 2$ of a dollar or you have 2 of the 4 quarters you need to |
| make a dollar, or $\frac{2}{4}$ of a dollar, you still have $1 / 2$ of a dollar, half of what you need to have a whole dollar. Give another |
| example of equivalent fractions. Describe what you must do to simplify a fraction. |

## Content (the "Meat")

## Problem of the Day

Jorge's pool measures 45 feet by 36 feet. If a cover for the pool costs $\$ 2.00$ per square foot, how much will the cover cost? Explain how you got your answer.

## Fact Practice

## Spokes on a Wheel

1. Divide students into pairs
2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire)
3. Have students choose to put a 6,7 or 8 in the center circle
4. Student rolls two dice and adds the pips (dots)
5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$
6. Process continues until all spokes have an equation

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Math Vocabulary |  |
| :---: | :---: |
| Word for Today: simplify |  |
| Description: Simplify is a term we use to ind lowest possible terms. In other words, the fractic example, if we have the fraction $\frac{12}{16}$ which can lowed or most simple terms. We can still sim and reduce or simplify the fraction. | cate that a fraction has been written in the ction cannot be reduced any further. For be reduced to $\frac{6}{8}$, but this is not reduced to the lify the fraction into $\frac{3}{4}$. Begin the fraction $\frac{6}{36}$ |
| Students complete the Vocabulary Notebook Vocabulary Notebook Sample: |  |
| New Word <br> simplify | My Description <br> Simplify means to make the fraction as easy as possible to understand. |
| Personal Connection <br> I had a homework assignment that had me simplify fractions. | Drawing $\frac{4}{8}=\frac{2}{4}=\frac{1}{2}$ |

## Activity <br> Comparing Fractions

## Addition of Fractions

There are three steps to adding fractions.
Step 1: Make sure the bottom numbers (the denominators) are the same
Step 2: Add the top numbers (the numerators). Put the answer over the same denominator.
Step 3: Simplify the fraction (if needed)
Example: $\frac{1}{3}+\frac{2}{3}=\frac{3}{3}$ and then reduce to the simplest terms, 1.
Complete several examples with the students. Today and tomorrow all of the denominators should be the same. (In several days, you will have students work with problems that have different denominators).

## Check It Off

## Directions:

1. Divide students into pairs.
2. Give each pair a Check It Off game board and deck of cards, white boards and pens/crayons.
3. Shuffle the cards and place them to the right of the game board.
4. Player 1 draws a problem card and goes through the Check It Off steps to find the correct answer for the fraction addition problem.
5. Player 1 locates the answer on the game board and places a marker on it.
6. Player 2 repeats the process.
7. Game is over when all of the cards have been solved.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## $4^{\text {th }}-5^{\text {th }}$ Grade Check It Off



| $\frac{1}{3}+\frac{2}{3}=$ | $\frac{2}{9}+\frac{5}{9}=$ | $\frac{1}{6}+\frac{1}{6}=$ |
| :---: | :---: | :---: |
| $\frac{3}{6}+\frac{1}{6}=$ | $\frac{2}{4}+\frac{2}{4}=$ | $\frac{1}{2}+\frac{1}{2}=$ |
| $\frac{5}{8}+\frac{2}{8}=$ | $\frac{1}{5}+\frac{2}{5}=$ | $\frac{2}{10}+\frac{4}{10}=$ |
| $\frac{1}{4}+\frac{1}{4}=$ | $\frac{3}{5}+\frac{1}{5}=$ | $\frac{3}{7}+\frac{2}{7}=$ |
| $\frac{1}{3}+\frac{1}{3}=$ | $\frac{1}{6}+\frac{4}{6}=$ |  |
| $\frac{2}{7}+\frac{4}{7}=$ | $\frac{1}{4}=$ | $\frac{1}{5}+\frac{4}{5}=$ |
| $\frac{3}{8}+\frac{2}{8}=$ | $\frac{1}{9}+\frac{4}{9}=$ | $\frac{4}{9}+\frac{4}{9}=$ |
| $\frac{2}{9}+\frac{3}{9}=$ |  |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Check It Off 2 |
| Focus: | Fractions |


| Materials: |  |
| :--- | :--- |
| White boards | Vocabulary Notebooks |
| Crayolas Dice <br> Activity at the end of the lesson plan Socks (use for erasers)${ }^{2}$ |  |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you |
| use your knowledge of fractions in the real world? Why is it important that items be divided equally? Adding fractions |
| requires that you think through several steps. After you have checked to be sure that the denominators are the same, what |
| is the next step. How do you know? Would you rather have $\frac{3}{5}$ or $\frac{7}{8}$ of a pizza? |

## Content (the "Meat") Problem of the Day

John is thinking of a number that can be divided evenly by 2,3 , and 6 . Name at least two possible numbers. Explain your thinking.

## Fact Practice

## Multiplication Ladder

1. Give each student a white board (include marker or crayola)
2. Student should draw a ladder like the one below

3. Have student roll 2 dice, total the pips and then multiply that number times each of the

> *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| numbers in the ladder, writing the total to the right of the number |  |
| :---: | :---: |
| Word for today: reduce <br> Description: Reduce is the term we use to manageable. If you have a fraction that is $\frac{150}{3}$ denominator are large, the fact is that you s how much you have is easier when the fraction reduce a fraction you do the same to both th the relationship to stay in proportion. <br> Create a Notebook entry for the word: redu Vocabulary Notebook Sample: | cabulary <br> discuss how to make fractions more , even though the numerator and the have $1 / 2$ of the whole thing. Understanding n has been reduced to its lowest form. To numerator and the denominator which allows |
| New Word <br> reduce | My Description a fraction like $\frac{75}{100}$ is easier to understand when reduced to $\frac{3}{4}$. |
| Personal Connection <br> If I eat 4 of the eight pieces of pizza, then I have eaten $1 / 2$ of it. | Drawing |

## Activity

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

## Addition of Fractions

There are three steps to adding fractions.
Step 1: Make sure the bottom numbers (the denominators) are the same
Step 2: Add the top numbers (the numerators). Put the answer over the same denominator.
Step 3: Simplify the fraction (if needed)
Example: $\frac{1}{3}+\frac{2}{3}=\frac{3}{3}$ and then reduce to the simplest terms, 1.
Complete several examples with the students. Today and tomorrow all of the denominators should be the same. (In several days, you will have students work with problems that have different denominators).

## Check It Off

## Directions:

1. Divide students into pairs
2. Give each pair a Check It Off game board and deck of cards, white boards and pens/crayons
3. Shuffle the cards and place them to the right of the game board
4. Player 1 draws a problem card and goes through the Check It Off steps to find the correct answer for the fraction addition problem
5. Player 1 locates the answer on the game board and places a marker on it
6. Player 2 repeats the process
7. Game is over when all of the cards have been solved.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## $4^{\text {th }}-5^{\text {th }}$ Grade Check It Off



| $\frac{1}{3}+\frac{2}{3}=$ | $\frac{2}{9}+\frac{5}{9}=$ | $\frac{1}{6}+\frac{1}{6}=$ |
| :---: | :---: | :---: |
| $\frac{3}{6}+\frac{1}{6}=$ | $\frac{2}{4}+\frac{2}{4}=$ | $\frac{1}{2}+\frac{1}{2}=$ |
| $\frac{5}{8}+\frac{2}{8}=$ | $\frac{1}{5}+\frac{2}{5}=$ | $\frac{2}{10}+\frac{4}{10}=$ |
| $\frac{1}{4}+\frac{1}{4}=$ | $\frac{3}{5}+\frac{1}{5}=$ | $\frac{3}{7}+\frac{2}{7}=$ |
| $\frac{1}{3}+\frac{1}{3}=$ | $\frac{1}{6}+\frac{4}{6}=$ |  |
| $\frac{2}{7}+\frac{4}{7}=$ | $\frac{1}{4}=$ | $\frac{1}{5}+\frac{4}{5}=$ |
| $\frac{3}{8}+\frac{2}{8}=$ | $\frac{1}{9}+\frac{4}{9}=$ | $\frac{4}{9}+\frac{4}{9}=$ |
| $\frac{2}{9}+\frac{3}{9}=$ |  |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's the Difference? |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Activities at the end of this lesson plan Socks (use as erasers)

## Cards

Vocabulary Notebooks

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What are the steps that you must complete in the addition of fractions? What do you think the steps are that you must complete to subtract fractions?

## Content (the "Meat")

## Problem of the Day

Which of the following numbers are prime? Which are composite numbers? Explain how you know.

## $13 \quad 35 \quad 265171$

## Fact Practice

## Target

1. Divide students into trios
2. Each trio needs a deck of cards without face cards and jokers
3. Place the cards face up in a TicTac Toe Grid
4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1 )
5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide
6. Each card may be used only one time in the equation
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck
9. Player with the most cards at the end of the game win

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Word for Today: prime <br> Description: Prime is a mathematical term we use to describe a number that can only be <br> divided evenly by itself and 1 . For example, 5 is a prime number because its only 2 factors <br> are 1 and 5 . 6 on the other hand is a composite number because the factors for 6 are 1 and <br> 6 , and 2 and 3 . Both combinations in multiplication will get you to a product of 6 . What are <br> some other numbers that are prime that are higher than 5 and less than 20. Prime numbers <br> help you to reduce fractions. <br> Students should complete the Vocabulary Notebook <br> Vocabulary Notebook Sample: |
| :--- |
| New Word My Description <br> prime Numbers that are prime can't be divided by <br> any number other than 1 and itself  |
| Personal Connection |

## Activity

Fractions

## Subtraction of Fractions

There are three steps to subtracting fractions.
Step 1: Make sure the bottom numbers (the denominators) are the same
Step 2: Subtract the top numbers (the numerators). Put the answer over the same denominator.
Step 3: Simplify the fraction (if needed)
Example: $\frac{2}{3}-\frac{1}{3}=\frac{1}{3}$ and then reduce to the simplest terms, 1.
Complete several examples with the students. Today and tomorrow all of the denominators should be the same. (In several days, you will have students work with problems that have different denominators).

## What's the Difference? <br> Directions:

1. Divide students into pairs
2. Give each pair a What's the Difference? game board and deck of cards, white boards and pens/crayons
3. Shuffle the cards and place them to the right of the game board
4. Player 1 draws a problem card and goes through the What's the Difference steps to find the correct answer for the fraction addition problem
5. Player 1 locates the answer on the game board and places a marker on it
6. Player 2 repeats the process

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
7. Game is over when all of the cards have been solved

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade What's the Difference?

$4^{\text {th }}-5^{\text {th }}$ Grade What's the Difference?

| $\frac{2}{3}-\frac{1}{3}=$ | $\frac{5}{9}-\frac{2}{9}=$ | $\frac{5}{6}-\frac{1}{6}=$ |
| :---: | :---: | :---: |
| $\frac{3}{6}-\frac{1}{6}=$ | $\frac{3}{4}-\frac{2}{4}=$ | $\frac{2}{2}-\frac{1}{2}=$ |
| $\frac{5}{8}-\frac{2}{8}=$ | $\frac{4}{5}-\frac{1}{5}=$ | $\frac{3}{10}=\frac{2}{7}=$ |
| $\frac{2}{4}-\frac{1}{4}=$ | $\frac{7}{5}-\frac{1}{7}=$ | $\frac{4}{6}-\frac{1}{6}=$ |
| $\frac{3}{3}-\frac{1}{3}=$ | $\frac{2}{4}-\frac{1}{4}=$ | $\frac{4}{5}=$ |
| $\frac{4}{7}-\frac{2}{7}=$ | $\frac{5}{8}-\frac{1}{8}=$ | $\frac{4}{9}-\frac{1}{9}=$ |
| $\frac{3}{8}-\frac{2}{8}=$ | $\frac{9}{9}-\frac{1}{9}=$ | $\frac{4}{9}=$ |
| $\frac{3}{9}-\frac{2}{9}=$ |  |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's the Difference 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Product Hunt Work Sheet

Vocabulary Notebooks two, 12-sided dice for each pair Sock (for erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you |
| use your knowledge of fractions in the real world? What are the steps that you must complete in the addition of fractions? |
| What are the steps are that you must complete to subtract fractions? Would you rather have $\frac{9}{11}$ or $\frac{8}{10} ?$ |

## Content (the "Meat")

## Problem of the Day

Nancy bought $\$ 25.83$ worth of pears from a local orchard. If she bought nine pounds of pears, how much did the pears cost per pound? Tell how you know.

## Fact Practice

## Product Hunt

1. Divide students into pairs
2. Each pair needs a Product Hunt sheet (attached to this lesson plans )
3. Player rolls two, 12 -sided dice.
4. Player multiplies the two numbers.
5. If the product is not yet covered, then player may cover the product.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

## Word for Today: composite

Description: Composite is a term we use to describe a number that can be divided evenly by numbers other than 1 and itself. For example: 9 is composite because it can be divided evenly by 1,3 , and 9 . Numbers are either prime ( 1 and the number only) or composite (not prime.
Create an entry of the term composite in the vocabulary notebook.
Vocabulary Notebook Sample:

| New Word | My Description <br> composite |
| :--- | :--- |
| Personal Connection |  |
| My age this year is a composite number. | Drawingand 12 are composite <br> numbers. |

## Activity <br> Fractions

## Subtraction of Fractions

There are three steps to subtracting fractions.
Step 1: Make sure the bottom numbers (the denominators) are the same
Step 2: Subtract the top numbers (the numerators). Put the answer over the same denominator.
Step 3: Simplify the fraction (if needed)
Example: $\frac{2}{3}-\frac{1}{3}=\frac{1}{3}$ and then reduce to the simplest terms, 1 .
Complete several examples with the students. Today and tomorrow all of the denominators should be the same. (In several days, you will have students work with problems that have different denominators).

## What's the Difference?

## Directions:

1. Divide students into pairs
2. Give each pair a What's the Difference? game board and deck of cards, white boards and pens/crayons
3. Shuffle the cards and place them to the right of the game board
4. Player 1 draws a problem card and goes through the What's the Difference steps to find the correct answer for the fraction addition problem
5. Player 1 locates the answer on the game board and places a marker on it
6. Player 2 repeats the process
7. Game is over when all of the cards have been solved
academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

$4^{\text {th }}-5^{\text {th }}$ Grade What's the Difference?

$4^{\text {th }}-5^{\text {th }}$ Grade What's the Difference?

| $\frac{2}{3}-\frac{1}{3}=$ | $\frac{5}{9}-\frac{2}{9}=$ | $\frac{5}{6}-\frac{1}{6}=$ |
| :---: | :---: | :---: |
| $\frac{3}{6}-\frac{1}{6}=$ | $\frac{3}{4}-\frac{2}{4}=$ | $\frac{2}{2}-\frac{1}{2}=$ |
| $\frac{5}{8}-\frac{2}{8}=$ | $\frac{4}{5}-\frac{1}{5}=$ | $\frac{3}{10}=\frac{2}{7}=$ |
| $\frac{2}{4}-\frac{1}{4}=$ | $\frac{7}{5}-\frac{1}{7}=$ | $\frac{4}{6}-\frac{1}{6}=$ |
| $\frac{3}{3}-\frac{1}{3}=$ | $\frac{2}{4}-\frac{1}{4}=$ | $\frac{4}{5}=$ |
| $\frac{4}{7}-\frac{2}{7}=$ | $\frac{5}{8}-\frac{1}{8}=$ | $\frac{4}{9}-\frac{1}{9}=$ |
| $\frac{3}{8}-\frac{2}{8}=$ | $\frac{9}{9}-\frac{1}{9}=$ | $\frac{4}{9}=$ |
| $\frac{3}{9}-\frac{2}{9}=$ |  |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's in Common? |
| Focus: | Fractions |

## Materials:

White boards Vocabulary Notebooks

Crayolas
Decks of cards
Activity at the end of the lesson plan
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about common denominators? Getting two fractions with different denominators to have the same |
| denominator is a process. There are steps that you need to go through to be sure that you have found now only a |
| common denominator but the lowest common denominator. What do you know about how to find common denominators? |
| If you are looking at the numbers 3,9 and 15, what would a common denominator be. (45) |

## Content (the "Meat")

## Problem of the Day

After Joni's first birthday party she had twice the amount of money she had before the party. After her second birthday party she had three times the amount of money she had after the first birthday party. If she had $\$ 150.00$ after the second birthday party, how much money did she have before the first party? How do you know?

## Fact Practice

Draw!

1. Divide students into pairs and give each pair a deck of cards
2. Remove the face cards and jokers from the deck of cards.
3. Shuffle the deck.
4. Decide who will go first.
5. First player draws two cards.
6. Student multiplies the cards.
7. Student writes his/her problem on the white board, writing a complete number sentence.
8. Students take turns drawing and creating problems.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

## Word for Today: common denominator

Description: A common denominator is a term that we use to describe what occurs when two or more fractions have the same denominator. If the denominators are not the same, or they are not common, you cannot add or subtract fractions. You can find a common denominator by trying different multiples of the fractions. For example, you cannot add $1 / 2$ and $1 / 3$ until you have a common denominator (in this case 6) and you would have fractions of $\frac{3}{6}$ and $\frac{2}{6}$
Create a Notebook entry for the term: common denominator
Vocabulary Notebook Sample:

| New Word | My Description |
| :---: | :---: |
| common denominator | Two or more whole things that have been divided into the same number of parts |
| Personal Connection | Drawing |
| When we divide sandwiches we want to divide each one in thirds, so the common denominator is 3 . | $\longrightarrow \frac{3}{6} \text { and } \frac{2}{6}$ |

## Activity

## Fractions

## Common Denominators

A common denominator is when two or more fractions have the same denominator (the number on the bottom). If the denominators are not the same (not "common") you cannot add or subtract the fractions. You can find a common denominator by asking yourself this question:
Look at the denominators. If one or both of the denominators are prime numbers (can only be achieved in multiplication by 1 x the number) then multiply the denominators together and you will have the common denominator. Then you will convert each of the fractions into that fraction. For example:
the two fractions, $1 / 2$ and $1 / 3$, both the 2 and 3 are prime, so the common denominator is $6(2 x$ 3). Another example would be in the fractions $\frac{3}{7}+\frac{2}{5}=$ both the 7 and the 5 are prime so the common denominator would be $35(7 \times 5)$. Once the common denominator is selected, then you would write the new denominator on the bottom and then multiply the numerator by the factor (7 or 5 ) that is NOT currently its denominator. For example: If you are converting $1 / 2$ to $6^{\text {th }}$ you would set it up this way: $\frac{1}{2}=\frac{-}{6}$ and then to find the numerator, multiply the 1 times the $3(2 \times 3)$ the factor in this problem NOT the denominator and you have the fraction $\frac{3}{6}$. Then you would convert $\frac{1}{3}=\frac{-}{6}$ and then to find the numerator, multiply 1 time the $2(2 \times 3)$ the factor in this problem NOT the denominator and you have the fraction $\frac{2}{6}$. Now you can add the two fractions with the same denominators: $\frac{3}{6}+\frac{2}{6}=\frac{5}{6}$.

## What's In Common? \#1

## Directions:

1. Divide students into pairs
academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
2. Give each pair a set of What's In Common cards and game board, white board and pens/crayons
3. Shuffle the cards and place them to the right of the game board
4. Together, the pair draws a card and determines what the common denominator is, finds that number on the game board and places a marker on it.
5. Pair then converts the fractions on the card to fractions with the same denominator, writing them on the white board.
6. Activity is over when all cards have been drawn.
7. Game is over when all of the improper fractions are in the mixed number form.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## $4^{\text {th }}-5^{\text {th }}$ Grade Common Denominators \#1


$4^{\text {th }}-5^{\text {th }}$ Grade Common Denominator Cards \#1

| $\frac{2}{5}$ | $\frac{1}{3}$ | $\frac{5}{11}$ | $\frac{2}{5}$ | $\frac{5}{7}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\frac{1}{2}$ |  |  |  |  |
| $\frac{3}{5}$ | $\frac{1}{2}$ | $\frac{3}{5}$ | $\frac{2}{13}$ | $\frac{2}{3}$ |
| $\frac{5}{13}$ | $\frac{1}{5}$ |  |  |  |
| $\frac{2}{17}$ | $\frac{1}{2}$ | $\frac{2}{7}$ | $\frac{1}{5}$ | $\frac{4}{5}$ |
| $\frac{3}{5}$ | $\frac{1}{19}$ | $\frac{3}{7}$ | $\frac{2}{11}$ |  |
| $\frac{3}{3}$ | $\frac{7}{11}$ | $\frac{1}{7}$ | $\frac{4}{11}$ | $\frac{1}{7}$ |
| $\frac{4}{7}$ | $\frac{2}{3}$ | $\frac{2}{3}$ | $\frac{1}{5}$ | $\frac{4}{5}$ |
| $\frac{1}{11}$ | $\frac{1}{5}$ | $\frac{5}{7}$ | $\frac{1}{3}$ | $\frac{4}{11}$ |
| $\frac{3}{3}$ | $\frac{2}{7}$ | $\frac{9}{11}$ | $\frac{1}{2}$ | $\frac{9}{13}$ |
| $\frac{4}{7}$ |  |  |  |  |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's in Common? 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Activity at the end of the lesson plan

## Double 9 Dominoes

Vocabulary Notebooks

Socks (use for erasers)

## Opening

State the objective
Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

What do you know about common denominators? When do you need to use common denominators? How can you find a common denominator? Do you know what a Z Pattern is? What is the most challenging this about working with fractions?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Complete the table to show the value of $y$ for each value of $x$. Explain how you found your answers.$60 \div x=y$$X$ $Y$ <br> 2  <br> 4  <br> 6  <br> 10  <br> 12  | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a |
| Fact Practice <br> Spots and Dots <br> There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future. <br> Players sit across from each other. <br> Dominoes are between them, face (or spots) down. <br> Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is | understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |



## fraction. For example:

the two fractions, $1 / 2$ and $1 / 3$, both the 2 and 3 are prime, so the common denominator is $6(2 x$ 3). Another example would be in the fractions $\frac{3}{7}+\frac{2}{5}=$ both the 7 and the 5 are prime so the common denominator would be $35(7 \times 5)$. Once the common denominator is selected, then you would write the new denominator on the bottom and then make the conversion. The conversion is a $Z$ or reversed $Z$ pattern. For example: If you are converting $\frac{1}{2}$ to - you would divide the smallest denominator into the largest denominator $(6 \div 2=3)$ and then take the quotient, 3 , and multiply it by the $1(3 \times 1)$ and the product is the new numerator. Then you would convert $\frac{1}{3}=\frac{-}{6}$ by first saying $6 \div 3=2$, and $2 \times 1=2$, and creating the fraction $\frac{2}{6}$. Now you can add the two fractions with the same denominators: $\frac{3}{6}+\frac{2}{6}=\frac{5}{6}$.
Sometimes, the denominators are NOT both prime. Perhaps one is prime and the other is not, or perhaps neither are prime. If this is the case you would first ask yourself this question:
Will the smallest denominator divide equally into the largest denominator? In other words, it is a factor of the largest denominator. For example: $\frac{1}{4}+\frac{1}{2}=$ the smallest denominator " 2 " will divide evenly into the 4 , so it would be simplest to leave the $\frac{1}{4}$ as it is and convert the $\frac{1}{2}$ into $\frac{2}{4}$. Remember to use the " $Z$ ". $4 \div 2=2 ; 2 \times 1=2$ and that is the new numerator. If the answer to the question, Will the smallest denominator divide evenly into the largest denominator? is "No", then it is important that you determine the multiples of each of the denominators.
For example, in the problem $\frac{2}{6}+\frac{3}{4}$ neither of the denominators are prime. The smallest number will not divide evenly into the largest denominator. So, we move to the multiples of each number. The multiples of 4 are $4,8,12,16,20$, and 24 . The multiples of 6 are $6,12,18$, 24. The lowest common multiple is 12 , so that will become the denominator. You then will operate the " $Z$ " and set the problem up to look this way: $\frac{2}{6}=\frac{4}{12}$ and $\frac{3}{4}=\frac{9}{12}$. Now the problem will look this way: $\frac{4}{12}+\frac{9}{12}=$

## What's In Common? \#2

## Directions:

1. Divide students into pairs
2. Give each pair a set of What's In Common cards and game board, white board and pens/crayons
3. Shuffle the cards and place them to the right of the game board
4. Together, the pair draws a card and determines what the common denominator is, finds that number on the game board and places a marker on it.
5. Pair then converts the fractions on the card to fractions with the same denominator, writing them on the white board.
6. Activity is over when all cards have been drawn.

|  | Closing |
| :--- | :--- |
| Say: | Review |
| - |  |
| Please recap what we did today. |  |
| Three Whats we achieve our objectives? |  |
| Ask the following three what questions: |  |
| What was your key learning for the day? <br> What opportunities might you have to do this same thing in the "real world"? <br> What advice would you give to a "new" student getting ready to do this activity. |  |

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Double 9 Dominoes



|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |


|  | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |  |
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| $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
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## $4^{\text {th }}-5^{\text {th }}$ Grade Common Denominators \#1

| 15 | 55 | 14 | 10 | 65 | 6 | 65 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 35 | Common Denominators \#1 <br> A common denominator is when two or more fractions have the same denominator (the number on the bottom). If the denominators are not the same (not "common") you cannot add or subtract the fractions. Look at the denominators. If one or both of the denominators are prime numbers (can only be achieved in multiplication by 1 x the number) then multiply the denominators together and you will have the common denominator. |  |  |  |  | 35 |
| 34 |  |  |  |  |  | 95 |
| 77 |  |  |  |  |  | 15 |
| 77 |  |  |  |  |  | 77 |
| 21 |  |  |  |  |  | 15 |
| 55 | 55 | 21 | 33 | 35 | 22 | 91 |

$4^{\text {th }}-5^{\text {th }}$ Grade Common Denominator Cards \#1

| $\frac{2}{5} \quad \frac{1}{3}$ | $\frac{5}{11} \quad \frac{2}{5}$ | $\frac{5}{7} \quad \frac{1}{2}$ |
| :---: | :---: | :---: |
| $\frac{3}{5} \quad \frac{1}{2}$ | $\frac{3}{5} \quad \frac{2}{13}$ | $\frac{2}{3} \quad \frac{1}{2}$ |
| $\frac{5}{13} \quad \frac{2}{5}$ | $\frac{2}{7} \frac{1}{5}$ | $\frac{4}{5} \quad \frac{2}{7}$ |
| $\frac{2}{17} \quad \frac{1}{2}$ | $\begin{array}{ll}\frac{3}{5} & \frac{1}{19}\end{array}$ | $\begin{array}{ll} \frac{3}{7} & \frac{2}{11} \end{array}$ |
| $\begin{array}{ll}\frac{3}{5} & \frac{1}{3}\end{array}$ | $\frac{7}{11} \quad \frac{1}{7}$ | $\frac{4}{11} \quad \frac{1}{7}$ |
| $\begin{array}{ll}\frac{4}{7} & \frac{2}{3}\end{array}$ | $\frac{2}{3} \frac{1}{5}$ | $\frac{4}{5} \quad \frac{1}{11}$ |
| $\frac{3}{11} \quad \frac{2}{5}$ | $\frac{5}{7} \quad \frac{1}{3}$ | $\frac{4}{11} \quad \frac{1}{3}$ |


| $\frac{3}{5}$ | $\frac{2}{7}$ | $\frac{9}{11}$ | $\frac{1}{2}$ | $\frac{9}{13}$ | $\frac{4}{7}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Set It Up Right |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Decks of cards

Vocabulary Notebooks
6 -sided dice; 12 -sided dice
Socks (use as erasers)

Activity at end of the lesson plan

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about adding fractions? What do you know about subtracting fractions? How do you find a common |
| denominator? How can you find equivalent fractions? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Nick has $\$ 11.35$. He has no more than four coins and three bills. He has no pennies or halfdollars. How many different combinations are there? How do you know? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $\begin{aligned} & 9 \times 4=36 \\ & 4 \times 9=36 \\ & 36 \div 4=9 \\ & 36 \div 9=4 \end{aligned}$ <br> Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families | happening and what they are <br> thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: common denominator <br> Description: Common denominator is a term we use to describe two or more denominators that are the same. Two days ago we looked closely at this word and what it means. Today, | It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary |

review the term in your Vocabulary Notebook with a friend and determine if you need to add something to your original entry. Use the term in a sentence.

Vocabulary Notebook Sample:
$\left.\begin{array}{|l|l|}\hline \text { New Word } \\ \text { common denominator }\end{array} \quad \begin{array}{l}\text { My Description } \\ \text { Two fractions that has the same bottom } \\ \text { number even if the numerators are different }\end{array}\right]$

## Activity

Fractions

## Adding or Subtracting Fractions

When you are adding or subtracting fractions you will always go through the three steps:
Step 1: Make sure the bottom numbers (the denominators) are the same
Step 2: Add or subtract the top numbers (the numerators). Put the answer over the same denominator.
Step 3: Simplify the fraction (if needed)
Example: $\frac{1}{3}+\frac{2}{3}=\frac{3}{3}$ or : $\frac{2}{3}-\frac{1}{3}=\frac{1}{3}$ and then reduce to the simplest terms.
If in Step 1 you check and the denominators are NOT the same, you will need to first find a common denominator and convert one or both of the fractions to this new common denominator so you can either add or subtract the fractions. Remember the process of determining the lowest common denominator. Complete several examples, reminding the students of the " $Z$ " pattern.

## Set It Up Right!

## Directions:

1. Divide students into pairs
2. Give each pair a Set It Up Right game board and Problem Card
3. Together the pair works with each of the problems to get it set up to either add or subtract.
4. Once the pair has determined how to set the problem up, they find that set up on the Game Board and mark it with a token
5. Activity is complete when all problems have been set up correctly.
notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## $4^{\text {th }}-5^{\text {th }}$ Grade Set It Up Right

| $\begin{array}{r} \frac{4}{10} \\ +\frac{5}{10} \end{array}$ | $\begin{array}{r} \frac{4}{10} \\ +\frac{5}{10} \end{array}$ | 78 <br> 156 <br> +84 <br> 156 | $\frac{4}{6}$ $+\frac{1}{6}$ | $\frac{1}{12}$ $+\frac{9}{12}$ | $\frac{30}{60}$ $+\frac{18}{60}$ | $\frac{10}{35}$ $+\frac{21}{35}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{1}{4} \\ +\frac{2}{4} \\ \hline \end{array}$ | Adding or Subtracting Fractions <br> When you are adding or subtracting fractions you will always go through the three steps: <br> Step 1: Make sure the bottom numbers (the denominators) are the same Step 2: Add or subtract the top numbers (the numerators). Put the answer over the same denominator. <br> Step 3: Simplify the fraction (if needed) <br> Example: $\frac{1}{3}+\frac{2}{3}=\frac{3}{3}$ or : $\frac{2}{3}-\frac{1}{3}=\frac{1}{3}$ and then reduce to the simplest terms. If in Step 1 you check and the denominators are NOT the same, you will need to first find a common denominator and convert one or both of the fractions to this new common denominator so you can either add or subtract the fractions. Remember the process of determining the lowest common denominator. Complete several examples, reminding the students of the "Z" pattern |  |  |  |  | $\begin{array}{r} \frac{9}{72} \\ +\frac{40}{72} \end{array}$ |
| $\begin{array}{r} \frac{8}{12} \\ +\frac{9}{12} \end{array}$ |  |  |  |  |  | $\begin{array}{r} \frac{28}{56} \\ +\frac{24}{56} \end{array}$ |
| $\begin{array}{r} \frac{3}{10} \\ +\frac{8}{10} \end{array}$ |  |  |  |  |  | $\begin{array}{r} \frac{25}{60} \\ +\frac{6}{60} \\ \hline \end{array}$ |
| $\begin{array}{r} \frac{4}{40} \\ +\frac{20}{40} \end{array}$ |  |  |  |  |  | $\begin{array}{r} \frac{8}{24} \\ +\frac{3}{24} \end{array}$ |
| $\begin{array}{r} \frac{5}{12} \\ +\frac{3}{12} \end{array}$ |  |  |  |  |  | 24 <br> 30 <br> $+\frac{15}{30}$ |
| $\begin{array}{r} \frac{7}{8} \\ +\frac{2}{8} \\ \hline \end{array}$ | $\begin{array}{r}\frac{2}{6} \\ +\frac{5}{6} \\ \hline\end{array}$ | $\frac{5}{8}$ $+\frac{4}{8}$ | $\frac{4}{6}$ $+\frac{5}{6}$ | $\frac{6}{9}$ $+\frac{4}{9}$ | $\begin{array}{r}2 \\ 4 \\ +\frac{3}{4} \\ \hline\end{array}$ | $\begin{array}{r}\frac{6}{21} \\ +\frac{7}{21} \\ \hline\end{array}$ |

Consult 4 Kids Lesson Plans
$4^{\text {th }} 5^{\text {th }}$ Grade Set It Up Right

| $\begin{array}{r} \frac{7}{8} \\ +\frac{1}{4} \end{array}$ | $\begin{array}{r} \frac{1}{3} \\ +\frac{5}{6} \\ \hline \end{array}$ | $\begin{array}{r} \frac{5}{12} \\ +\frac{1}{10} \\ \hline \end{array}$ | $\begin{array}{r}\frac{2}{7} \\ +\frac{3}{5} \\ \hline\end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{3}{10} \\ +\frac{4}{5} \end{array}$ | $\begin{array}{r} \frac{1}{12} \\ +\frac{3}{4} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{5} \\ +\frac{5}{10} \\ \hline \end{array}$ | $\begin{array}{r} \frac{4}{5} \\ +\frac{3}{6} \\ \hline \end{array}$ |
| $\begin{array}{r} \frac{1}{4} \\ +\frac{1}{2} \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ +\frac{4}{9} \\ \hline \end{array}$ | $\begin{array}{r} \frac{1}{8} \\ +\frac{5}{9} \end{array}$ | $\begin{array}{r} \frac{2}{7} \\ +\frac{1}{3} \\ \hline \end{array}$ |
| $\begin{gathered} \frac{1}{10} \\ +\frac{4}{8} \end{gathered}$ | $\begin{array}{r} \frac{5}{8} \\ +\frac{1}{2} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ +\frac{1}{6} \end{array}$ | $\begin{array}{r} \frac{4}{8} \\ +\frac{3}{7} \end{array}$ |
| $\begin{array}{r} \frac{2}{3} \\ +\frac{5}{6} \\ \hline \end{array}$ | $\begin{aligned} & \frac{5}{12} \\ & +\frac{1}{4} \end{aligned}$ | $\begin{aligned} & \frac{6}{12} \\ & +\frac{7}{13} \end{aligned}$ | $\frac{1}{2}$ $+\frac{3}{4}$ |


| $\frac{2}{5}$ | $\frac{2}{3}$ | $\frac{6}{12}$ | $\frac{2}{6}$ |
| :---: | :---: | :---: | :---: |
| $+\frac{1}{2}$ | $+\frac{3}{4}$ | $+\frac{3}{10}$ | $+\frac{1}{8}$ |
|  |  | + |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Set It Up Right 2 |
| Focus: | Fractions |

## Materials:

White boards Vocabulary Notebooks

Crayolas Decks of cards
Activity at the end of the lesson plan Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about adding fractions? What do you know about subtracting fractions? How do you find a common |
| denominator? How can you find equivalent fractions? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Desi had $\$ 7.18$. Today he earned $\$ 5.85$ raking leaves. How much money does he have now? Explain how you know. | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice Multiples <br> Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas ( 150 chart). <br> 1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice) <br> 2. Mark all multiples of the number and then pass off to the next person. <br> 3. Player may mark the same number. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: Z pattern <br> Description: Z pattern is a term we use to describe the process for translating fractions into | It is important to review academic math vocabulary often throughout the day. |

equivalent fractions. Two days ago we looked closely at this word and what it means. Today, review the term in your Vocabulary Notebook with a friend and determine if you need to add something to your original entry. Use the term in a sentence.

Vocabulary Notebook Sample:

| New Word | My Description <br> A pattern |
| :--- | :--- |
| A pattern that you use to find equivalent <br> fractions |  |
| After using the $Z$ pattern I found that $1 / 2$ is <br> equal to $\frac{5}{10}$. | Drawing |

## Activity

## Fractions

## Adding or Subtracting Fractions

When you are adding or subtracting fractions you will always go through the three steps:
Step 1: Make sure the bottom numbers (the denominators) are the same
Step 2: Add or subtract the top numbers (the numerators). Put the answer over the same denominator.
Step 3: Simplify the fraction (if needed)
Example: $\frac{1}{3}+\frac{2}{3}=\frac{3}{3}$ or : $\frac{2}{3}-\frac{1}{3}=\frac{1}{3}$ and then reduce to the simplest terms.
If in Step 1 you check and the denominators are NOT the same, you will need to first find a common denominator and convert one or both of the fractions to this new common denominator so you can either add or subtract the fractions. Remember the process of determining the lowest common denominator. Complete several examples, reminding the students of the "Z" pattern.

## Set It Up Right!

## Directions:

1. Divide students into pairs
2. Give each pair a Set It Up Right game board and Problem Card
3. Together the pair works with each of the problems to get it set up to either add or subtract.
4. Once the pair has determined how to set the problem up, they find that set up on the Game Board and mark it with a token
5. Activity is complete when all problems have been set up correctly.

Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice-Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

## $4^{\text {th }}-5^{\text {th }}$ Grade Set It Up Right

| $\begin{array}{r} \frac{4}{10} \\ +\frac{5}{10} \end{array}$ | $\begin{array}{r} \frac{4}{10} \\ +\frac{5}{10} \\ \hline \end{array}$ | 78 <br> 156 <br> $+\frac{84}{156}$ | $\frac{4}{6}$ $+\frac{1}{6}$ | $\frac{1}{12}$ $+\frac{9}{12}$ | $\frac{30}{60}$ $+\frac{18}{60}$ | $\frac{10}{35}$ $+\frac{21}{35}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{1}{4} \\ +\frac{2}{4} \end{array}$ | Adding or Subtracting Fractions <br> When you are adding or subtracting fractions you will always go through the three steps: <br> Step 1: Make sure the bottom numbers (the denominators) are the same Step 2: Add or subtract the top numbers (the numerators). Put the answer over the same denominator. <br> Step 3: Simplify the fraction (if needed) <br> Example: $\frac{1}{3}+\frac{2}{3}=\frac{3}{3}$ or : $\frac{2}{3}-\frac{1}{3}=\frac{1}{3}$ and then reduce to the simplest terms. If in Step 1 you check and the denominators are NOT the same, you will need to first find a common denominator and convert one or both of the fractions to this new common denominator so you can either add or subtract the fractions. Remember the process of determining the lowest common denominator. Complete several examples, reminding the students of the "Z" pattern |  |  |  |  | $\begin{array}{r} \frac{9}{72} \\ +\frac{40}{72} \end{array}$ |
| $\begin{array}{r} \frac{8}{12} \\ +\frac{9}{12} \end{array}$ |  |  |  |  |  | $\frac{28}{56}$ $+\frac{24}{56}$ |
| $\begin{array}{r} \frac{3}{10} \\ +\frac{8}{10} \end{array}$ |  |  |  |  |  | $\begin{array}{r} \frac{25}{60} \\ +\quad \frac{6}{60} \\ \hline \end{array}$ |
| $\begin{array}{r} \frac{4}{40} \\ +\frac{20}{40} \end{array}$ |  |  |  |  |  | $\begin{array}{r} \frac{8}{24} \\ +\frac{3}{24} \end{array}$ |
| $\begin{array}{r} \frac{5}{12} \\ +\frac{3}{12} \end{array}$ |  |  |  |  |  | 24 <br> 30 <br> $+\frac{15}{30}$ |
| $\begin{array}{r} \frac{7}{8} \\ +\frac{2}{8} \\ \hline \end{array}$ | $\begin{array}{r}\frac{2}{6} \\ +\frac{5}{6} \\ \hline\end{array}$ | $\frac{5}{8}$ $+\frac{4}{8}$ | $\begin{array}{r}\frac{4}{6} \\ +\frac{5}{6} \\ \hline\end{array}$ | $\frac{6}{9}$ $+\frac{4}{9}$ | $\frac{2}{4}$ $+\frac{3}{4}$ | $\begin{array}{r}\frac{6}{21} \\ +\frac{7}{21} \\ \hline\end{array}$ |

Consult 4 Kids Lesson Plans
$4^{\text {th }} 5^{\text {th }}$ Grade Set It Up Right

| $\begin{array}{r} \frac{7}{8} \\ +\frac{1}{4} \end{array}$ | $\begin{array}{r} \frac{1}{3} \\ +\frac{5}{6} \\ \hline \end{array}$ | $\begin{array}{r} \frac{5}{12} \\ +\frac{1}{10} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{7} \\ +\frac{3}{5} \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{3}{10} \\ +\frac{4}{5} \end{array}$ | $\begin{array}{r} \frac{1}{12} \\ +\frac{3}{4} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{5} \\ +\frac{5}{10} \\ \hline \end{array}$ | $\begin{array}{r} \frac{4}{5} \\ +\frac{3}{6} \\ \hline \end{array}$ |
| $\begin{array}{r} \frac{1}{4} \\ +\frac{1}{2} \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ +\frac{4}{9} \\ \hline \end{array}$ | $\begin{array}{r} \frac{1}{8} \\ +\frac{5}{9} \end{array}$ | $\begin{array}{r} \frac{2}{7} \\ +\frac{1}{3} \\ \hline \end{array}$ |
| $\begin{array}{r} \frac{1}{10} \\ +\frac{4}{8} \end{array}$ | $\begin{array}{r} \frac{5}{8} \\ +\frac{1}{2} \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ +\frac{1}{6} \end{array}$ | $\begin{array}{r} \frac{4}{8} \\ +\frac{3}{7} \end{array}$ |
| $\begin{array}{r} \frac{2}{3} \\ +\frac{5}{6} \\ \hline \end{array}$ | $\begin{aligned} & \frac{5}{12} \\ & +\frac{1}{4} \end{aligned}$ | $\begin{aligned} & \frac{6}{12} \\ & +\frac{7}{13} \end{aligned}$ | $\frac{1}{2}$ $+\frac{3}{4}$ |


| $\frac{2}{5}$ | $\frac{2}{3}$ | $\frac{6}{12}$ | $\frac{2}{6}$ |
| :---: | :---: | :---: | :---: |
| $+\frac{1}{2}$ | $+\frac{3}{4}$ | $+\frac{3}{10}$ | $+\frac{1}{8}$ |
|  |  | + |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below

| Opening |
| :---: |
| State the objective |
| Today we are going to have fun playing games that we learned this week. |

## Content (the "Meat")

Activity
Today is review day. Students will be able to select from the Fraction Games you played for the last 10 days. Ask students to select from:

Fraction Review
Check It Off
What's the Difference
What's In Common
Set It Up Right

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Add 'Em Up |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Deck of cards

Activities at end of lesson plan
Vocabulary Notebooks
Socks (use as erasers)

## Opening

State the objective
Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What is an improper fraction? What is a mixed number? What are equivalent fractions? What do you know about addition fractions? Do you think it would be easier to add fractions if you wrote the problems horizontally or vertically? What makes you think that?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Joni had $\$ 25.00$. She spent $\$ 15.89$ on a new CD. Does she have enough money left to purchase a book for $\$ 8.99$. Tell how you know. | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication War <br> - Divide students into pairs. Give each pair a deck of cards without face cards and jokers. <br> - Shuffle the deck and divide the cards evenly between the two players <br> - On go, the players turn over the cards at the same time <br> - Students multiply the 2 numbers that have been turned up <br> - First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer <br> - At the end of round, students may reshuffle the pile of cards that they have <br> - Play can continue until one player has all cards or time has called | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in "teaching to learn". |

Math Vocabulary

| Word for Today: like denominators |
| :--- |
| Description: A fraction has two numbers, a numerator, the number on top, and the |
| denominator, the number on the bottom. When you add fractions you must have the same |
| denominator on the bottom in both fractions. Otherwise it is like adding apples and |
| oranges. If the fractions don't have the same denominator, you will have to find equivalent |
| fractions with the same denominator. |
| Review the entry in your Vocabulary Notebook for the word denominator with a friend. |
| Make a new entry for the term like denominators. |
| Vocabulary Notebook Sample: | | New Word | My Description <br> like denominators |
| :--- | :--- |
| Personal Connection denominators are two or more <br> fractions that have the same bottom <br> number |  |
| $\frac{1}{8 .}$ and $\frac{3}{4}$ do not have like denominators. | Drawing |

## Activity <br> Fractions

## Addition of Fractions

When adding fractions the denominators MUST be the same. If this is not the case it is like adding apples and oranges, two items that are not the same so they cannot be added.
In the problems today, the denominators ARE the same to focus students on the process of adding and then simplifying the fraction as necessary.
Simplifying the fraction means reducing the fraction until it is the most "understandable".
For example $1 / 2$ is easier to understand than $\frac{7}{14}$. You may also find that after addition you have more than 1 whole. For example, if you have ordered 4 different pizzas, each of them divided into 8 pieces, if at the end of the meal you have 3 pieces of one pizza, 2 of another, 4 of the third and 1 of the fourth, you have a total of 10 pieces, which you could combine into 1 pizza plus 2 additional pieces so you would have $1 \frac{1}{4}$ pizzas.
Write several problems on the board adding fractions with like denominators AND reducing to the simplest form.

## Add 'Em Up

## Directions:

1. Divide students into pairs.
2. Give each pair an Add 'Em Up game board, deck of Add 'Em Up game cards, white boards, and markers (this can be different colors of construction paper)

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.
3. Shuffle the cards and put them face down next to the game board.
4. Player 1 draws a card and completes the problem on the card (using the white board as necessary).
5. Player 1 finds answer on the game board and marks with a marker.
6. Player 2 continues in the same way.
7. Game is over when all spaces on the game board are covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans

## Addition 'Em Up Game Cards

| $\begin{array}{r} \frac{2}{7} \\ +\frac{3}{7} \\ \hline \end{array}$ | $\begin{array}{r} \frac{7}{12} \\ +\frac{7}{12} \\ \hline \end{array}$ | $\begin{array}{r} \frac{1}{5} \\ +\frac{2}{5} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ +\frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} \frac{5}{6} \\ +\frac{5}{6} \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{11}{14} \\ +\frac{9}{14} \end{array}$ | $\begin{array}{r} \frac{7}{8} \\ +\frac{5}{8} \\ \hline \end{array}$ | $\begin{array}{r} \frac{3}{4} \\ +\frac{3}{4} \\ \hline \end{array}$ | $\begin{array}{r} \frac{11}{12} \\ +\frac{5}{12} \end{array}$ | $\begin{array}{r} \frac{8}{9} \\ +\frac{4}{9} \end{array}$ |
| $\begin{array}{r} \frac{7}{8} \\ +\frac{3}{8} \end{array}$ | $\begin{array}{r} \frac{8}{9} \\ +\frac{5}{9} \end{array}$ | $\begin{array}{r} \frac{3}{10} \\ +\frac{7}{10} \end{array}$ | $\begin{array}{r} \frac{11}{12} \\ +\frac{7}{12} \end{array}$ | $\begin{array}{r} \frac{14}{15} \\ +\frac{4}{15} \\ \hline \end{array}$ |

Addition "Em Up Game Board


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Subtract 'Em |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks (for erasers)

Decks of cards
Vocabulary Notebooks
Activity at end of lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. Write a fraction on a piece of paper or a white board. Share with a friend the information about the fraction, including the numerator and the denominator. What do you know about the addition of fractions? What do you know about the subtraction of fractions? Since addition and subtraction are reciprocal actions, what do you think about the addition of fractions would also be true for the subtraction of fractions?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Look at the bill for lunch. If your mom pays the bill with a $\$ 100.00$ bill, how much change will she get? <br> Fact Practice <br> Foreheader <br> 1. Divide students into trios. Give each trio a deck of cards without face cards and jokers. <br> 2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest <br> 3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead <br> 4. The referee multiplies the two numbers together and states the answer | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in "teaching to learn". |

5. Each player looks at the other person's exposed number and names his/her own number
6. Person who wins (accuracy and time), collects both cards
7. Play continues until all cards are gone.
8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee

## Math Vocabulary

## Word for today: like denominators

Description: Denominator is a term we use to describe the number of pieces that there are in the whole. Denominators in subtraction, just like in addition, must be the same or you can't subtract. The process is the same as in addition. When you are ready to work the problem, you subtract instead of adding.
Review entry in your notebook for the term: denominator. Review with a friend and review the entry for Like denominators as well. Add information about the subtraction of fractions as well
Vocabulary Notebook Sample:

| New Word | My Description <br> like denominators <br> When the bottom number of two or more <br> fractions is alike, the denominators are <br> alike. |
| :--- | :--- |
| Personal Connection <br> $1 / 4$ and $3 / 4$ have like denominators. | Drawing |

## Activity <br> Fractions

## Subtraction of Fractions

When subtracting fractions the denominators MUST be the same. If this is not the case it is like subtracting apples from oranges, two items that are not the same so they cannot be subtracted.
In the problems today, the denominators ARE the same to focus students on the process of subtracting and then simplifying the fraction as necessary.
Simplifying the fraction means reducing the fraction until it is the most "understandable".
For example $1 / 2$ is easier to understand than $\frac{7}{14}$. You may also find that after subtraction, you have more than 1 whole. For example, if you have ordered 4 different pizzas, each of them divided into 8 pieces, if at the end of the meal you have 3 pieces of one pizza, 2 of another, 4 of the third and 1 of the fourth, you have a total of 10 pieces, which you could combine into 1 pizza plus 2 additional pieces so you would have $1 \frac{1}{4}$ pizzas. So to find out how much pizza was eaten we would want to subtract $1 \frac{1}{4}$ pizzas from 4 whole pizzas to discover the $23 / 4$ pizzas were eaten.
Write several problems on the board subtracting fractions with like denominators AND reducing to the simplest form.

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Subtract 'Em

## Directions:

1. Divide students into pairs.
2. Give each pair an Subtract 'Em game board, deck of Subtract 'Em game cards, white boards, and markers (this can be different colors of construction paper)
3. Shuffle the cards and put them face down next to the game board.
4. Player 1 draws a card and completes the problem on the card (using the white board as necessary).
5. Player 1 finds answer on the game board and marks with a marker.
6. Player 2 continues in the same way.
7. Game is over when all spaces on the game board are covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Subtract 'Em Game Cards

| $\begin{array}{r} \frac{5}{7} \\ -\frac{3}{7} \end{array}$ | $\begin{array}{r} \frac{9}{12} \\ -\frac{7}{12} \\ \hline \end{array}$ | $\begin{array}{r} \frac{3}{5} \\ -\frac{2}{5} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ -\frac{1}{3} \\ \hline \end{array}$ | $\begin{array}{r} \frac{9}{6} \\ -\frac{5}{6} \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{11}{14} \\ -\frac{9}{14} \end{array}$ | $\begin{array}{r} \frac{7}{8} \\ -\frac{5}{8} \end{array}$ | $\begin{array}{r} \frac{7}{4} \\ -\frac{3}{4} \end{array}$ | $\begin{array}{r} \frac{11}{12} \\ -\frac{5}{12} \end{array}$ | $\begin{array}{r} \frac{8}{9} \\ -\frac{4}{9} \\ \hline \end{array}$ |
| $\begin{array}{r} \frac{7}{8} \\ -\frac{3}{8} \end{array}$ | $\begin{array}{r} \frac{8}{9} \\ -\frac{5}{9} \end{array}$ | $\begin{array}{r} \frac{9}{10} \\ -\frac{3}{10} \end{array}$ | $\begin{array}{r} \frac{11}{12} \\ -\frac{7}{12} \\ \hline \end{array}$ | $\begin{array}{r} \frac{14}{15} \\ -\frac{4}{15} \\ \hline \end{array}$ |

Subtract 'Em


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Unlike Addition |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Dice

Vocabulary Notebooks
Socks (for erasers)
Activity at the end of the lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills working with fractions. |

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What does it mean to have like denominators? What is the process for finding like denominators? Write a "recipe" for finding equivalent fractions and like denominators for fractions with different denominators.

| Content (the "Meat") |  |
| :--- | :--- |
| Problem of the Day | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout |
| Your family is going to Lego Land. You and your two brothers are each taking a friend, and <br> both mom and dad are going. Adult tickets cost $\$ 22.50$ each, and student tickets are <br> $\$ 18.75$ each. What will be the total cost of admission? | During the lesson check in <br> with students repeatedly. |
| Fact Practice | Check in about what is |
| happening and what they are |  |
| thinking. |  |


| Math Vocabulary |
| :--- |
| Word for Today: equivalent fractions <br> Description: Equivalent fractions is a math term that describes two fractions that have the <br> same value even though they are not represented with the same fraction. For example, if <br> you have $1 / 2$ of a pizza, you could also have $\frac{2}{4}, \frac{3}{6}, \frac{4}{8}$, or $\frac{5}{10}$. These are all equivalent <br> fractions. No matter how you write it, you have $1 / 2$ of all that there is. <br> Students review Vocabulary Notebook, add information as necessary. <br> Vocabulary Notebook Sample: <br> New Word My Description <br> equivalent fractions $1 / 2$ and $\frac{100}{200}$ are equivalent fractions <br> Personal Connection <br> My sister and I had equivalent fractional <br> parts of the pizza. Drawing$\frac{4}{8}=\frac{2}{4}=\frac{1}{2}$ |

## Activity Comparing Fractions

## Addition of Fractions

Often times when we are ready to add or subtract fractions the denominators are not alike. When that is the case, the first thing that needs to occur is that you find the common denominator for the fractions. The easiest way to do this, of course, is to multiply the two denominators together and use that number. While that will ALWAYS work, it may not be the lowest possible common denominator. To find the lowest common denominator you must ask yourself several questions:
Are both of the denominators prime numbers? If "yes", then multiply together. If "no", ask: Will the smallest denominator go into the larger denominator evenly? If "yes", begin here and translate the fraction with the smaller denominator into a fraction with the other denominator. If "no", then ask: What number will both of these divide into evenly (other than the product of multiplying them together.)
Once both fractions are translated into fractions with common denominators, you are ready to add or subtract. Remember to simplify your answer.

## Unlike Addition

## Directions:

1. Divide students into pairs.
2. Give each pair an Unlike Addition game board, deck of Unlike Addition game cards, white boards, and markers (this can be different colors of construction paper)
3. Shuffle the cards and put them face down next to the game board.
4. Player 1 draws a card and completes the problem on the card (using the white board as necessary).
5. Player 1 finds answer on the game board and marks with a marker.
6. Player 2 continues in the same way.
7. Game is over when all spaces on the game board are covered.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Unlike Addition Game Cards

| $\begin{array}{r} \frac{2}{5} \\ +\frac{1}{3} \end{array}$ | $\begin{array}{r} \frac{5}{8} \\ +\frac{3}{4} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ +\frac{5}{6} \\ \hline \end{array}$ | $\begin{array}{r} \frac{3}{4} \\ +\frac{1}{3} \\ \hline \end{array}$ | $\begin{array}{r} \frac{1}{3} \\ +\frac{5}{6} \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{4}{5} \\ +\frac{9}{10} \end{array}$ | $\begin{array}{r} \frac{1}{2} \\ +\frac{1}{7} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{7} \\ +\frac{3}{14} \\ \hline \end{array}$ | $\begin{array}{r} \frac{9}{10} \\ +\frac{1}{2} \end{array}$ | $\begin{array}{r} \frac{5}{9} \\ +\frac{2}{3} \end{array}$ |
| $\begin{array}{r} \frac{5}{6} \\ +\frac{7}{12} \end{array}$ | $\begin{array}{r} \frac{2}{5} \\ +\frac{7}{10} \end{array}$ | $\begin{array}{r} \frac{3}{10} \\ +\frac{7}{15} \end{array}$ | $\begin{array}{r} \frac{5}{12} \\ +\frac{7}{18} \end{array}$ | $\begin{array}{r} \frac{2}{5} \\ +\quad \frac{4}{15} \\ \hline \end{array}$ |

Unlike Addition Game Board


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Unlike Subtraction |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | Dice |

Activity at the end of the lesson plan
Socks (use for erasers)

| Opening |
| :--- |
| $\quad$ State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you |
| use your knowledge of fractions in the real world? What does it mean that in order to subtract the fractions need to have |
| like denominators? What does it mean to have equivalent fractions? Would you rather have $\frac{3}{5}$ or $\frac{1}{2}$ of a pizza? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> At the game store, a Monopoly games costs $\$ 9.95$. Jill also bought a Sorry game. The total bill was $\$ 24.16$. How much did the Sorry game cost? How do you know? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication Ladder <br> 1. Give each student a white board (include marker or crayola) <br> 2. Student should draw a ladder like the one below <br> 3. Have student roll 2 dice, total the pips and then multiply that number times each of the numbers in the ladder, writing the total to the right of the number | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary | It is important to review |

## Word for today: reduce

Description: Reduce is the term we use to discuss how to make fractions more manageable. If you have a fraction that is $\frac{150}{300}$, even though the numerator and the denominator are large, the fact is that you still have $1 / 2$ of the whole thing. Understanding how much you have is easier when the fraction has been reduced to its lowest form. To reduce a fraction you do the same to both the numerator and the denominator which allows the relationship to stay in proportion.
Look in your notebook at your entry for the term "reduce". Add any information that you believe makes more sense.
Vocabulary Notebook Sample:

| New Wordreduce | My Description <br> a fraction like $\frac{75}{100}$ is easier to understand <br> when reduced to $\frac{3}{4}$. |
| :--- | :--- |
| Personal Connection <br> If I eat 4 of the eight pieces of pizza, then I <br> have eaten $1 / 2$ of it. | Drawing <br> 8 |

## Activity

## Subtraction of Fractions

Often times when we are ready to add or subtract fractions the denominators are not alike. When that is the case, the first thing that needs to occur is that you find the common denominator for the fractions. The easiest way to do this, of course, is to multiply the two denominators together and use that number. While that will ALWAYS work, it may not be the lowest possible common denominator. To find the lowest common denominator you must ask yourself several questions:
Are both of the denominators prime numbers? If "yes", then multiply together. If "no", ask: Will the smallest denominator go into the larger denominator evenly? If "yes", begin here and translate the fraction with the smaller denominator into a fraction with the other denominator. If "no", then ask: What number will both of these divide into evenly (other than the product of multiplying them together.)
Once both fractions are translated into fractions with common denominators, you are ready to add or subtract. Remember to simplify your answer.

## Unlike Subtraction

## Directions:

1. Divide students into pairs.
2. Give each pair an Unlike Subtraction game board, deck of Unlike Subtraction game cards, white boards, and markers (this can be different colors of construction paper)
3. Shuffle the cards and put them face down next to the game board.
4. Player 1 draws a card and completes the problem on the card (using the white
academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
board as necessary).
5. Player 1 finds answer on the game board and marks with a marker.
6. Player 2 continues in the same way.
7. Game is over when all spaces on the game board are covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans
Unlike Subtraction

| $\begin{array}{r} \frac{1}{2} \\ -\frac{1}{3} \end{array}$ | $\begin{array}{r} \frac{5}{8} \\ -\frac{3}{16} \\ \hline \end{array}$ | $\begin{array}{r} \frac{2}{3} \\ -\frac{5}{9} \\ \hline \end{array}$ | $\begin{array}{r} \frac{11}{12} \\ -\frac{3}{8} \\ \hline \end{array}$ | $\begin{array}{r} \frac{9}{10} \\ -\frac{3}{20} \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{5}{12} \\ -\frac{1}{3} \end{array}$ | $\begin{array}{r} \frac{1}{2} \\ -\frac{1}{4} \\ \hline \end{array}$ | $\begin{array}{r} \frac{4}{5} \\ -\frac{3}{10} \\ \hline \end{array}$ | $\begin{array}{r} \frac{9}{10} \\ -\frac{1}{15} \end{array}$ | $\begin{array}{r} \frac{2}{5} \\ -\frac{3}{10} \end{array}$ |
| $\begin{array}{r} \frac{2}{5} \\ -\frac{1}{4} \end{array}$ | $\begin{array}{r} \frac{5}{6} \\ -\frac{5}{18} \end{array}$ | $\begin{array}{r} \frac{7}{8} \\ -\frac{1}{2} \end{array}$ | $\begin{array}{r} \frac{11}{12} \\ -\frac{1}{4} \end{array}$ | $\frac{13}{21}$ $-\frac{2}{7}$ |

Unlike Subtraction


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Addition of Mixed Numbers |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Activities at the end of this lesson plan
Cards
Socks (use as erasers)

## Opening

State the objective
Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What is meant by a mixed number? If you wanted to change a mixed number into a fraction, what type of a fraction would it become? Why would you want to work with a mixed fraction?

## Content (the "Meat")

## Problem of the Day

Jorge and 6 of his friends are going to split the lunch bill. The total bill was $\$ 27.90$. How much will each person pay?

## Fact Practice

## Target

1. Divide students into trios
2. Each trio needs a deck of cards without face cards and jokers
3. Place the cards face up in a TicTac Toe Grid
4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1 )
5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide
6. Each card may be used only one time in the equation
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck
9. Player with the most cards at the end of the game win

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Math Vocabulary |  |  |  |
| :---: | :---: | :---: | :---: |
| Word for Today: mixed number |  |  |  |
| Description: Mixed number is a mathematical term that refers to the combination of a whole number and a fraction to describe a value. For example, $31 / 2$ is a mixed number. It tells you that there are 3 whole items and $1 / 2$ of a fourth item. |  |  |  |
| Students should review their Vocabulary Notebook and have an accurate and informative entry for the term "mixed number". <br> Vocabulary Notebook Sample: |  |  |  |
| New Word  <br>  mixed number | My Description <br> A whole number and a fraction as one number |  |  |
|  |  |  |  |
| Personal Connection | Drawing |  |  |
| My little brother is $71 / 2$ years old. |  |  |  |

Activity

## Fractions

## Addition of Mixed Numbers

A mixed number is a whole number and a fraction together, for example $1 \frac{1}{2}$. This number represents one whole something (say a pizza) and $1 / 2$ of another pizza. You can add mixed numbers with fractions that have common denominators as well as those which do not provided you translate the unlike fractions into a fraction with common denominators. We are going to begin by adding mixed numbers with a common denominator. When you simplify addition sums of mixed numbers, you may need to add in a whole item if the two fractions total more than one. For example if you have $21 / 2$ pizzas and your neighbor brings over $3 / 4$ of another pizza, when you put the pizza together in a box, you will end up with $31 / 4$ pizzas.
Draw the problem out and you will see why this answer is real.

## Mixed Results—Addition

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Mixed Results Cards and a white board.
3. Shuffle the cards together and place in a $4 \times 4$ grid, face down.
4. Player 1 turns over two cards, looking for a match. An addition problem and an answer will create the match.
5. When a card is taken, replace the removed card with more cards.
6. Player 2 then continues to play.
7. Play is over when all cards have been paired.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.

When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Mixed Results—Addition Numbers (cut cards apart)

| $\begin{array}{r} 4 \frac{3}{8} \\ +2 \frac{1}{8} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{2}{5} \\ +3 \frac{1}{5} \\ \hline \end{array}$ | $\begin{array}{r} 4 \frac{3}{7} \\ +2 \frac{2}{7} \\ \hline \end{array}$ | $\begin{array}{r} 2 \frac{1}{3} \\ +2 \frac{1}{3} \end{array}$ | $\begin{array}{r}5 \frac{3}{6} \\ +2 \frac{5}{6} \\ \hline\end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} 5 \frac{1}{10} \\ +2 \frac{9}{10} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{3}{7} \\ +2 \frac{1}{7} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{2}{14} \\ +1 \frac{3}{14} \\ \hline \end{array}$ | $\begin{array}{r} 2 \frac{1}{2} \\ +3 \frac{1}{2} \end{array}$ | $\begin{array}{r} 4 \frac{5}{9} \\ +2 \frac{2}{9} \\ \hline \end{array}$ |
| $\begin{array}{r} 2 \frac{7}{12} \\ +3 \frac{7}{12} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{9}{10} \\ +4 \frac{7}{10} \end{array}$ | $\begin{array}{r} 2 \frac{7}{15} \\ +1 \frac{11}{15} \end{array}$ | $\begin{array}{r}4 \frac{1}{3} \\ +3 \frac{2}{3} \\ \hline\end{array}$ | $\begin{array}{r} 2 \frac{7}{15} \\ +2 \frac{4}{15} \\ \hline \end{array}$ |
| $61 / 2$ | $6 \frac{5}{7}$ | $4 \frac{2}{3}$ | $8 \frac{1}{3}$ | 8 |
| $5 \frac{4}{7}$ | $7 \frac{5}{14}$ | 6 | $6 \frac{7}{9}$ | $6 \frac{1}{6}$ |
| $10 \frac{3}{5}$ | $4 \frac{1}{5}$ | 8 | $4 \frac{11}{15}$ | $6 \frac{3}{5}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Subtraction of Mixed Numbers |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Product Hunt Work Sheet

Vocabulary Notebooks two, 12-sided dice for each pair Sock (for erasers)

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What are the steps are that you must complete to subtract fractions? What is a mixed number? In order to subtract, what will you do with the mixed number?

## Content (the "Meat")

## Problem of the Day

Joe practiced running the 100-yard dash every morning. He charted the time in the table below. What is his mean time? What was the range for his times? Explain how you know.

| Day | Seconds |
| :--- | :---: |
| Monday | 15.5 |
| Tuesday | 14 |
| Wednesday | 12.5 |
| Thursday | 14 |
| Friday | 12.5 |

## Fact Practice

## Product Hunt

1. Divide students into pairs
2. Each pair needs a Product Hunt sheet (attached to this lesson plans )
3. Player rolls two, 12 -sided dice.
4. Player multiplies the two numbers.
5. If the product is not yet covered, then player may cover the product.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

## Math Vocabulary

## Word for Today: simplify

Description: Simplify is a math term that refers to writing a fraction or an equation in its easiest to understand form. When you look at a fraction, while $\frac{75}{150}$ is the same as $1 / 2$, it is just easier to get your head around the concept of $1 / 2$. When the fraction is written as $1 / 2$ it has been simplified.
Create an entry of the term composite in the vocabulary notebook.
Vocabulary Notebook Sample:

| New Wordsimplify | My Description <br> Write things in is easiest to understand form. |
| :--- | :--- |
| Personal Connection <br> My brother says he is $73 / 4$ <br> is almost 8. | Drawing old, I say he |$\quad \frac{9}{18}$ is $\frac{1}{2}$|  |
| :--- |

Activity
Fractions

## Subtraction of Mixed Numbers

A mixed number is a whole number and a fraction together, for example $1 \frac{1}{2}$. This number represents one whole something (say a pizza) and $1 / 2$ of another pizza. You can add mixed numbers with fractions that have common denominators as well as those which do not provided you translate the unlike fractions into a fraction with common denominators. We are going to subtract mixed numbers with a common denominator. When you simplify the differences of mixed numbers, you will want to be sure that you have the correct fraction and whole numbers. For example if you have $21 / 2$ pizzas and your neighbor comes over and eats $1 / 4$ of a pizza, when you put the pizza together in a box, you will now have $21 / 4$ pizzas. Draw the problem out and you will see why this answer is real.

## Mixed Results-Subtraction

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Mixed Results Cards and a white board.
3. Shuffle the cards together and place in a $4 \times 4$ grid, face down.
4. Player 1 turns over two cards, looking for a match. An addition problem and an answer will create the match.
5. When a card is taken, replace the removed card with more cards.
6. Player 2 then continues to play.
7. Play is over when all cards have been paired.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

Mixed Results-Subtraction

| $\begin{array}{r} 4 \frac{3}{8} \\ -2 \frac{1}{8} \end{array}$ | $\begin{array}{r} 3 \frac{2}{5} \\ -2 \frac{1}{5} \\ \hline \end{array}$ | $\begin{array}{r} 4 \frac{3}{7} \\ -2 \frac{2}{7} \end{array}$ | $\begin{aligned} & 5 \frac{2}{3} \\ & -2 \frac{1}{3} \end{aligned}$ | $\begin{array}{r} 5 \frac{5}{6} \\ -2 \frac{1}{6} \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} 5 \frac{9}{10} \\ -2 \frac{3}{10} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{3}{7} \\ -2 \frac{1}{7} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{9}{14} \\ -1 \frac{3}{14} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{3}{4} \\ -1 \frac{1}{4} \end{array}$ | $\begin{array}{r} 4 \frac{5}{9} \\ -2 \frac{2}{9} \\ \hline \end{array}$ |
| $\begin{array}{r} 3 \frac{11}{12} \\ -1 \frac{7}{12} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{9}{10} \\ -4 \frac{7}{10} \\ \hline \end{array}$ | $\begin{array}{r} 2 \frac{11}{15} \\ -1 \frac{9}{15} \end{array}$ | $\begin{array}{r} 4 \frac{2}{3} \\ -3 \frac{1}{3} \end{array}$ | $\begin{array}{r} 9 \frac{7}{15} \\ -2 \frac{4}{15} \\ \hline \end{array}$ |
| $21 / 4$ | $1 \frac{1}{5}$ | $2 \frac{1}{7}$ | $3 \frac{1}{3}$ | $3 \frac{2}{3}$ |
| $3 \frac{3}{5}$ | $1 \frac{3}{7}$ | $5 \frac{3}{7}$ | $2 \frac{1}{2}$ | $2 \frac{1}{3}$ |
| $2 \frac{5}{12}$ | $1 \frac{1}{5}$ | $1 \frac{2}{15}$ | $1 \frac{1}{3}$ | $7 \frac{1}{5}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Addition, Unlike Denominators |
| Focus: | Fractions |

## Materials:

White boards Vocabulary Notebooks

Crayolas
Decks of cards
Activity at the end of the lesson plan
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about common denominators? Getting two fractions with different denominators to have the same |
| denominator is a process. There are steps that you need to go through to be sure that you have found now only a |
| common denominator but the lowest common denominator. What is a mixed number? What does it mean to simplify a |
| fraction? When would you do this? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> The food ad for Jake's advertised lemons at 8 for $\$ 2.99$. Green Frog's ad advertised buy 3 lemons and get 1 free. The price at the second store is $\$ .50$ for each lemon. Which place is offering the better deal? How do you know? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is <br> happening and what they are |
| Fact Practice <br> Draw! <br> 1. Divide students into pairs and give each pair a deck of cards <br> 2. Remove the face cards and jokers from the deck of cards. <br> 3. Shuffle the deck. <br> 4. Decide who will go first. <br> 5. First player draws two cards. <br> 6. Student multiplies the cards. <br> 7. Student writes his/her problem on the white board, writing a complete number sentence. <br> 8. Students take turns drawing and creating problems. | thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary | It is important to review academic math vocabulary |

## Word for Today: common denominator

Description: A common denominator is a term that we use to describe what occurs when two or more fractions have the same denominator. If the denominators are not the same, or they are not common, you cannot add or subtract fractions. You can find a common denominator by trying different multiples of the fractions. For example, you cannot add $1 / 2$ and $1 / 3$ until you have a common denominator (in this case 6) and you would have fractions of $\frac{3}{6}$ and $\frac{2}{6}$
Review the term common denominator in your vocabulary notebook. In order to add fractions, you must begin with common denominators.
Vocabulary Notebook Sample:
\(\left.$$
\begin{array}{|l|l|}\hline \text { New Word } & \text { My Description } \\
\text { common denominator }\end{array}
$$ \quad \begin{array}{c}Two or more whole things that have been <br>

divided into the same number of parts\end{array}\right]\)| Drawing |
| :--- |
| When we divide sandwiches we want to <br> divide each one in thirds, so the common <br> denominator is 3. |

Activity

## Fractions

## Addition of Mixed Numbers-Unlike Denominators

Addition of mixed numbers with unlike denominators begins just like simply addition fractions. You must first determine the common denominator for the fractions. You then translate the fractions into fractions with like denominators and add the fractions. You simplify the fraction and then if there is a whole number, you will add it to the other whole number addends.

The challenge of fractions is not the addition of the numerators, it is in the preparation of the fractions for addition and then the simplification of those fractions prior to adding the whole numbers.

Do several problems with the students on the board, talking through each of the steps before giving them the Addition of Unlike Mixed Card.

## Addition of Unlike Mixed

## Directions:

1. Divide students into pairs.
2. Give each pair an Addition of Unlike Mixed problems and white boards.
3. Working together, pairs complete each of the problems.
4. When the problems are completed, pair should take the letter of the problem and plug the letters into the riddle card.
5. If the problems were completed correctly, the answer to the riddle will be obvious. (Not all letters may be used in the answer).
often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Addition of Unlike Mixed

| H | S | T | E | N |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} 4 \frac{1}{3} \\ +3 \frac{1}{2} \end{array}$ | $\begin{array}{r} 7 \frac{5}{9} \\ +4 \frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} 2 \frac{5}{9} \\ +7 \frac{5}{6} \\ \hline \end{array}$ | $\begin{array}{r}3 \frac{1}{2} \\ +5 \frac{5}{6} \\ \hline\end{array}$ | $\begin{array}{r} 6 \frac{2}{3} \\ +2 \frac{5}{8} \\ \hline \end{array}$ |
| B | P | I | G | F |
| $\begin{array}{r} 4 \frac{3}{5} \\ +2 \frac{2}{3} \end{array}$ | $\begin{array}{r} 1 \frac{3}{4} \\ +9 \frac{3}{10} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{5}{6} \\ +2 \frac{1}{3} \end{array}$ | $\begin{array}{r}4 \frac{1}{2} \\ +7 \frac{4}{5} \\ \hline\end{array}$ | $\begin{array}{r} 3 \frac{3}{7} \\ +6 \frac{3}{14} \end{array}$ |
| C | J | A | W | M |
| $\begin{array}{r} 7 \frac{5}{8} \\ +3 \frac{1}{2} \end{array}$ | $\begin{array}{r} 4 \frac{7}{12} \\ +9 \frac{2}{3} \end{array}$ | $\begin{array}{r} 3 \frac{8}{9} \\ +2 \frac{2}{3} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ +3 \frac{5}{6} \end{array}$ | $\begin{array}{r} 5 \frac{1}{6} \\ +4 \frac{3}{4} \end{array}$ |
| U | D | R | 0 | L |
| $\begin{array}{r} 3 \frac{5}{9} \\ +2 \frac{13}{18} \end{array}$ | $\begin{array}{r}6 \frac{1}{2} \\ +3 \frac{2}{5} \\ \hline\end{array}$ | $\begin{array}{r}6 \frac{3}{4} \\ +2 \frac{5}{8} \\ \hline\end{array}$ | $\begin{array}{r}2 \frac{2}{3} \\ +6 \frac{1}{4} \\ \hline\end{array}$ | $\begin{array}{r}6 \frac{3}{4} \\ +3 \frac{1}{2} \\ \hline\end{array}$ |

## Consult 4 Kids Lesson Plans

Riddle for Day \#7

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $6 \frac{5}{9}$ | $7 \frac{4}{15}$ | $9 \frac{3}{8}$ | $6 \frac{5}{9}$ | $7 \frac{5}{6}$ | $6 \frac{5}{9}$ | $9 \frac{11}{12}$ |


|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $10 \frac{1}{4}$ | $8 \frac{1}{6}$ | $9 \frac{7}{24}$ | $11 \frac{1}{8}$ | $8 \frac{11}{12}$ | $10 \frac{1}{4}$ | $9 \frac{7}{24}$ |

Remove the answer from the Riddle.
$16^{\text {TH }}$ President of the United States: Abraham Lincoln

| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grade |
| Lesson Title: | Addition, Unlike Denominators 2 |
| Focus: | Fractions |

## Materials:

White boards
Vocabulary Notebooks
Crayolas Double 9 Dominoes
Activity at the end of the lesson plan
Socks (use for erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about common denominators? When do you need to use common denominators? How can you find a |
| common denominator? Do you know what a Z Pattern is? What are the steps to adding mixed numbers with unlike |
| denominators. |

## Content (the "Meat")

## Problem of the Day

There is a sale on sports pencils, 7 at $\$ 1.19$. If you need to purchase 35 pencils, how much will it cost you? Explain your answer.

## Fact Practice

## Spots and Dots

There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

Players sit across from each other.
Dominoes are between them, face (or spots) down.
Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

Multiplication: $2 \times 3=6$
Word for Today: $Z$ pattern $\quad$ Math Vocabulary
Description: A $Z$ pattern is a way to change fractions quickly into an equivalent fraction once
you have found the common denominator. For example: if you need to change $1 / 2$ into $6^{\text {th }} \mathrm{s}$,
you could use the $Z$ pattern. You would begin by writing the two fractions this way:

$$
\frac{1}{2}=\frac{1}{6}
$$

Step one is to ask yourself how many times 2 will go into 6 (answer is 3 ), and then $Z$ up to the numerator of 1 , multiplying it by the 3 you found when you divided 2 into 6 , finding the answer of 3 and writing it in the space above of the 6 .

Review your entry for the descriptive term "Z pattern".
Vocabulary Notebook Sample:

| New WordZ pattern | My Description <br> Looks like a Z or the mirror image of the Z- <br> tells you to zig zag |
| :--- | :--- |
| Personal Connection <br> A Z pattern makes finding equal fractions <br> easy. | Drawing |

## Activity <br> Fractions

Addition of Mixed Numbers-Unlike Denominators
Addition of mixed numbers with unlike denominators begins just like simply addition fractions. You must first determine the common denominator for the fractions. You then translate the fractions into fractions with like denominators and add the fractions. You simplify the fraction and then if there is a whole number, you will add it to the other whole number addends.

The challenge of fractions is not the addition of the numerators, it is in the preparation of the fractions for addition and then the simplification of those fractions prior to adding the whole numbers.

Do several problems with the students on the board, talking through each of the steps before giving them the Addition of Unlike Mixed Card.

## Addition of Unlike Mixed

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Directions:

1. Divide students into pairs.
2. Give each pair an Addition of Unlike Mixed problems and white boards.
3. Working together, pairs complete each of the problems.
4. When the problems are completed, pair should take the letter of the problem and plug the letters into the riddle card.
5. If the problems were completed correctly, the answer to the riddle will be obvious. (Not all of the letters may be used in the answer.)

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Double 9 Dominoes



|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |


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| - ${ }^{-}$ | $\begin{array}{ll} \bullet & 0 \\ 0 & 0 \end{array}$ |  |  |
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| - - | -0 0 | -00 | -00 |
| - 0 | - | -00 | -00 |
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Addition of Unlike Mixed

| H | S | T | E | N |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} 4 \frac{1}{3} \\ +3 \frac{1}{2} \end{array}$ | $\begin{array}{r} 7 \frac{5}{9} \\ +4 \frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} 2 \frac{5}{9} \\ +7 \frac{5}{6} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{1}{2} \\ +5 \frac{5}{6} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{2}{3} \\ +2 \frac{5}{8} \\ \hline \end{array}$ |
| B | P | I | G | F |
| $\begin{array}{r} 4 \frac{3}{5} \\ +2 \frac{2}{3} \end{array}$ | $\begin{array}{r} 1 \frac{3}{4} \\ +9 \frac{3}{10} \\ \hline \end{array}$ | $\begin{array}{r} 5 \frac{5}{6} \\ +2 \frac{1}{3} \\ \hline \end{array}$ | $\begin{array}{r} 4 \frac{1}{2} \\ +7 \frac{4}{5} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{3}{7} \\ +6 \frac{3}{14} \\ \hline \end{array}$ |
| C | J | A | W | M |
| $\begin{array}{r} 7 \frac{5}{8} \\ +3 \frac{1}{2} \end{array}$ | $\begin{array}{r} 4 \frac{7}{12} \\ +9 \frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{8}{9} \\ +2 \frac{2}{3} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ +3 \frac{5}{6} \end{array}$ | $\begin{array}{r}5 \frac{1}{6} \\ +4 \frac{3}{4} \\ \hline\end{array}$ |
| U | D | R | 0 | L |
| $\begin{array}{r} 3 \frac{5}{9} \\ +2 \frac{13}{18} \end{array}$ | $\begin{array}{r} 6 \frac{1}{2} \\ +3 \frac{2}{5} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{3}{4} \\ +2 \frac{5}{8} \end{array}$ | $\begin{array}{r} 2 \frac{2}{3} \\ +6 \frac{1}{4} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{3}{4} \\ +3 \frac{1}{2} \\ \hline \end{array}$ |

Riddle for Day \#8


|  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- |
| $9 \frac{3}{8}$ | $9 \frac{1}{3}$ | $6 \frac{5}{9}$ | $12 \frac{3}{10}$ | $6 \frac{5}{9}$ | $9 \frac{7}{24}$ |

Remove the answer from the puzzle before giving to students.
Actor, California Governor, President of the United States: Ronald Reagan

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Subtraction, Unlike Denominators |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Decks of cards

Vocabulary Notebooks
6 -sided dice; 12 -sided dice
Socks (use as erasers)

Activity at end of the lesson plan

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about adding fractions? What do you know about subtracting fractions? How do you find a common |
| denominator? How can you find equivalent fractions? What is a mixed number? What are the steps for subtracting |
| fractions with mixed numbers? |

## Content (the "Meat")

## Problem of the Day

Look at the menu below. If you have $\$ 6.00$ to spend and you want a drink, sandwich, and a dessert, what possible combinations could you order? Tell how you know.

| Hamburger | $\$ 4.25$ |
| :--- | :--- |
| Grilled Cheese | $\$ 2.70$ |
| Turkey | $\$ 3.85$ |
| Soda | $\$ 1.30$ |
| Juice | $\$ 1.45$ |
| Chocolate Milk | $\$ 0.80$ |
| Cookie | $\$ 0.50$ |
| Ice Cream Cone | $\$ 0.75$ |
| Apple | $\$ 1.00$ |

## Fact Practice

Fact Family
A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members:
$9 \times 4=36$
$4 \times 9=36$
$36 \div 4=9$
$36 \div 9=4$
Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.


Activity
Fractions

## Subtraction of Mixed Numbers-Unlike Denominators

Subtraction of mixed numbers with unlike denominators begins just like simply subtracting fractions. You must first determine the common denominator for the fractions. You then translate the fractions into fractions with like denominators and subtract the fractions. You simplify the fraction and then subtract the whole numbers.

The challenge of fractions is not the subtraction of the numerators, it is in the preparation of the fractions for subtraction and then the simplification of those fractions prior to subtracting the whole numbers.

Do several problems with the students on the board, talking through each of the steps before giving them the Subtraction of Unlike Mixed Card.

## Subtraction of Unlike Mixed

## Directions:

1. Divide students into pairs.
2. Give each pair an Subtraction of Unlike Mixed problems and white boards.
3. Working together, pairs complete each of the problems.
4. When the problems are completed, pair should take the letter of the problem and plug the letters into the riddle card.
5. If the problems were completed correctly, the answer to the riddle will be obvious. (Not all letters may be used in the answer).

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Subtraction of Unlike Mixed

| R | U | H | L | N |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} 9 \frac{4}{5} \\ -6 \frac{7}{10} \\ \hline \end{array}$ | $\begin{array}{r}9 \frac{7}{8} \\ -4 \frac{3}{4} \\ \hline\end{array}$ | $\begin{array}{r}8 \frac{3}{4} \\ -2 \frac{1}{6} \\ \hline\end{array}$ | $\begin{array}{r} 6 \frac{5}{6} \\ -2 \frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{2}{3} \\ -2 \frac{5}{12} \\ \hline \end{array}$ |
| P | W | B | E | Y |
| $\begin{array}{r} 6 \frac{2}{3} \\ -2 \frac{2}{5} \end{array}$ | $\begin{array}{r} 11 \frac{3}{4} \\ -9 \frac{3}{10} \\ \hline \end{array}$ | $\begin{array}{r}5 \frac{5}{6} \\ -2 \frac{1}{3} \\ \hline\end{array}$ | $\begin{array}{r} 7 \frac{4}{5} \\ -2 \frac{1}{2} \\ \hline \end{array}$ | $\begin{gathered} 6 \frac{3}{7} \\ -3 \frac{3}{14} \end{gathered}$ |
| I | M | F | 0 | T |
| $\begin{array}{r} 7 \frac{5}{8} \\ -4 \frac{1}{2} \end{array}$ | $\begin{array}{r} 9 \frac{11}{12} \\ -4 \frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{8}{9} \\ -2 \frac{2}{3} \end{array}$ | $\begin{array}{r} 5 \frac{5}{6} \\ -3 \frac{3}{4} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ -4 \frac{1}{6} \end{array}$ |
| G | D | A | S | C |
| $\begin{array}{r} 3 \frac{8}{9} \\ -2 \frac{13}{18} \end{array}$ | $\begin{array}{r}6 \frac{1}{2} \\ -3 \frac{2}{5} \\ \hline\end{array}$ | $\begin{array}{r}6 \frac{3}{4} \\ -2 \frac{5}{8} \\ \hline\end{array}$ | $\begin{array}{r}9 \frac{2}{3} \\ -6 \frac{1}{4} \\ \hline\end{array}$ | $\begin{array}{r}6 \frac{3}{4} \\ -3 \frac{1}{2} \\ \hline\end{array}$ |

Riddle Day \#9

|  |  |  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $4 \frac{1}{8}$ | $5 \frac{1}{4}$ | $5 \frac{3}{10}$ | $3 \frac{1}{10}$ | $3 \frac{1}{8}$ | $3 \frac{1}{4}$ | $4 \frac{1}{8}$ | $4 \frac{1}{4}$ |


|  |  |  |  |
| :---: | :--- | :--- | :--- |
| $3 \frac{1}{8}$ | $3 \frac{1}{10}$ | $2 \frac{1}{12}$ | $4 \frac{1}{6}$ |

Remove the answer before giving the riddle to the students.
Show hosted by Jennifer, Randy, and Steven: American Idol

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Subtraction, Unlike Denominators 2 |
| Focus: | Fractions |

## Materials:

White boards Vocabulary Notebooks

Crayolas
Decks of cards
Activity at the end of the lesson plan
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about adding fractions? What do you know about subtracting fractions? How do you find a common |
| denominator? How can you find equivalent fractions? What is a mixed number? Why does a common denominator |
| matter when you are working with mixed numbers? What is an example of a mixed number in the real world? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> If $a=6$, what is the value of $c$ ? Explain your answer. $\begin{aligned} & a+a+a=b \\ & c=b+b \end{aligned}$ | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are |
| Fact Practice Multiples <br> Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas ( 150 chart). <br> 1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice) <br> 2. Mark all multiples of the number and then pass off to the next person. <br> 3. Player may mark the same number. | thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| Math Vocabulary |  |
| :---: | :---: |
| Word for Today: $\mathbf{Z}$ pattern |  |
| Description: $Z$ pattern is a term we use to describe the process for translating fractions into equivalent fractions. This is a pattern that describes the process of finding equivalent fractions. Turn to a partner and explain the process to them. Then review your Vocabulary Notebook entry. Add to it if you need to do so. |  |
| Vocabulary Notebook Sample: |  |
| New Word | My Description |
| Z pattern | A pattern that you use to find equivalent fractions |
| Personal Connection | Drawing |
| After using the $Z$ pattern I found that $1 / 2$ is equal to $\frac{5}{10}$. | $\frac{1}{2} \longrightarrow \frac{5}{10}$ |

## Activity

## Fractions

## Subtraction of Mixed Numbers-Unlike Denominators

Subtraction of mixed numbers with unlike denominators begins just like simply subtracting fractions. You must first determine the common denominator for the fractions. You then translate the fractions into fractions with like denominators and subtract the fractions. You simplify the fraction and then subtract the whole numbers.

The challenge of fractions is not the subtraction of the numerators, it is in the preparation of the fractions for subtraction and then the simplification of those fractions prior to subtracting the whole numbers.

Do several problems with the students on the board, talking through each of the steps before giving them the Subtraction of Unlike Mixed Card.

## Subtraction of Unlike Mixed

## Directions:

1. Divide students into pairs.
2. Give each pair a Subtraction of Unlike Mixed problems and white boards.
3. Working together, pairs complete each of the problems.
4. When the problems are completed, pair should take the letter of the problem and plug the letters into the riddle card.
5. If the problems were completed correctly, the answer to the riddle will be obvious. (Not all letters may be used in the answer).

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.

When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice-Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

Subtraction of Unlike Mixed

| R | U | H | L | N |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} 9 \frac{4}{5} \\ -6 \frac{7}{10} \\ \hline \end{array}$ | $\begin{array}{r}9 \frac{7}{8} \\ -4 \frac{3}{4} \\ \hline\end{array}$ | $\begin{array}{r}8 \frac{3}{4} \\ -2 \frac{1}{6} \\ \hline\end{array}$ | $\begin{array}{r} 6 \frac{5}{6} \\ -2 \frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} 6 \frac{2}{3} \\ -2 \frac{5}{12} \\ \hline \end{array}$ |
| P | W | B | E | Y |
| $\begin{array}{r} 6 \frac{2}{3} \\ -2 \frac{2}{5} \end{array}$ | $\begin{array}{r} 11 \frac{3}{4} \\ -9 \frac{3}{10} \\ \hline \end{array}$ | $\begin{array}{r}5 \frac{5}{6} \\ -2 \frac{1}{3} \\ \hline\end{array}$ | $\begin{array}{r} 7 \frac{4}{5} \\ -2 \frac{1}{2} \\ \hline \end{array}$ | $\begin{gathered} 6 \frac{3}{7} \\ -3 \frac{3}{14} \end{gathered}$ |
| I | M | F | 0 | T |
| $\begin{array}{r} 7 \frac{5}{8} \\ -4 \frac{1}{2} \end{array}$ | $\begin{array}{r} 9 \frac{11}{12} \\ -4 \frac{2}{3} \\ \hline \end{array}$ | $\begin{array}{r} 3 \frac{8}{9} \\ -2 \frac{2}{3} \end{array}$ | $\begin{array}{r} 5 \frac{5}{6} \\ -3 \frac{3}{4} \end{array}$ | $\begin{array}{r} 5 \frac{3}{4} \\ -4 \frac{1}{6} \end{array}$ |
| G | D | A | S | C |
| $\begin{array}{r} 3 \frac{8}{9} \\ -2 \frac{13}{18} \end{array}$ | $\begin{array}{r}6 \frac{1}{2} \\ -3 \frac{2}{5} \\ \hline\end{array}$ | $\begin{array}{r}6 \frac{3}{4} \\ -2 \frac{5}{8} \\ \hline\end{array}$ | $\begin{array}{r}9 \frac{2}{3} \\ -6 \frac{1}{4} \\ \hline\end{array}$ | $\begin{array}{r}6 \frac{3}{4} \\ -3 \frac{1}{2} \\ \hline\end{array}$ |

## Consult 4 Kids Lesson Plans

Riddle Day \#10


|  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $3 \frac{5}{12}$ | $3 \frac{1}{8}$ | $5 \frac{1}{4}$ | $4 \frac{4}{15}$ | $3 \frac{5}{12}$ | $2 \frac{1}{12}$ | $4 \frac{1}{4}$ | $3 \frac{5}{12}$ |

Bart, Homer, and others: The Simpsons

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below

| Opening |
| :---: |
| State the objective |
| Today we are going to have fun playing games that we learned this week. |

Content (the "Meat")
Activity
Today is a review day. Students should select from the following list of activities:
Add 'Em Up
Subtract 'Em
Unlike Addition
Unlike Subtraction
Mixed Results-Addition
Mixed Results-Subtraction
Addition of Unlike Mixed
Subtraction of Unlike Mixed

|  | Closing |
| :---: | :---: |
| Say: | Review |
| - Please recap what we did today. |  |
| - Did we achieve our objectives? |  |

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Multiplication of Fractions |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Deck of cards

Activities at end of lesson plan
Vocabulary Notebooks
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you <br> use your knowledge of fractions in the real world? What are the steps you complete to add fractions? What are the steps <br> you complete to subtract fractions? What do you know about multiplying fractions? |

## Content (the "Meat")

## Problem of the Day

Jorge knows how to solve two-digit multiplication problems. If Jorge were to explain to you what to do in the problem below, what would he tell you, step by step?

## 65

$\begin{array}{r}\times 47 \\ \hline\end{array}$

## Fact Practice

## Multiplication War

- Divide students into pairs. Give each pair a deck of cards without face cards and jokers.
- Shuffle the deck and divide the cards evenly between the two players
- On go, the players turn over the cards at the same time
- Students multiply the 2 numbers that have been turned up
- First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer
- At the end of round, students may reshuffle the pile of cards that they have
*Activity $\rightarrow$ Teachable Moment(s) throughout
During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in "teaching to learn".

| - Play can continue until one player has all cards or time has called |  |
| :---: | :---: |
| Math Vocabulary |  |
| Word for Today: denominator |  |
| Description: A fraction has two numbers, a numerator, the number on top, and the denominator, the number on the bottom. When you multiply fractions it does not matter if the denominators are the same or not. Unlike addition and subtraction, you simply leave the denominators alone. You multiply numerator times the numerator and the denominator times the denominator, and then reduce to its simplest form. |  |
| Review the entry in your Vocabulary Notebook for the word denominator with a friend. <br> Make a new entry for the term like denominators. <br> Vocabulary Notebook Sample: |  |
| New Word <br> denominators | My Description <br> Denominators are the bottom number of a fraction. It tells you have many parts in the whole. |
| Personal Connection <br> $\frac{1}{8}$ and $\frac{3}{4}$ have two different denominators, 8 and 4. | Drawing <br> denor indor |

## Activity <br> Fractions

## Multiplication of Fractions

When you are multiplying fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are multiplying fractions are written horizontally: For example:

$$
1 / 2 \times 1 / 4=
$$

Unlike addition and fractions that require the denominators to be the same, in multiplication that is not the case. It is perfectly okay for the denominators are different.
In the multiplication of fractions the operation is relatively simple: numerator times numerator, and denominator times denominator. So in the example above, $1 \times 1=1$, and 2 times 4 equals 8 so the answer would be $1 / 8$. In this particular example, the answer (product) would be in its simplest terms, so you would be finished. If the product was not in the simplest terms, you would want to reduce the product to its lowest terms.
One of the interesting things about multiplication of fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, to ensure that your answer will be in its simplest terms. For example:

$$
\frac{3}{4} \times \frac{8}{15}=
$$

will give you a product of $\frac{24}{60}$. Obviously that would need to be reduced to $\frac{2}{5}$. which can be

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.
cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 15.3 and 15 have a common divisor, 3 . Three is divided be three which equals 1 , and 15 can be divided by 3 and equals 5 . So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5 . Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4 . These two numbers also have a common divisor, 4. Four will go into 4 one time, and into the 8 , two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4} \times \frac{8}{15}=$ to $\frac{1}{1} \times \frac{2}{5}$ and once multiplied, the answer is in its simplest terms.
Work several problems with the students on the board so they understand the process.

## Multiplying Fractions

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Multiplying Fractions cards and game board.
3. Shuffle the cards and place between the players.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it.
5. Player 2 continues play in the same way.
6. Game is over when all answers have been covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Multiplication of Fractions

| $\frac{1}{6} \times \frac{3}{5}=$ | $\frac{3}{5} \times \frac{5}{9}=$ | $\frac{8}{15} \times \frac{3}{4}=$ | $\frac{5}{12} \times \frac{9}{25}=$ |
| :---: | :---: | :---: | :---: |
| $\frac{3}{10} \times \frac{5}{8}=$ | $\frac{3}{4} \times \frac{8}{9}=$ | $\frac{2}{3} \times \frac{9}{10}=$ | $\frac{12}{25} \times \frac{15}{24}=$ |
| $\frac{4}{5} \times \frac{5}{6}=$ | $\frac{3}{3} \times \frac{7}{10}=$ | $\frac{3}{10} \times \frac{5}{12}=$ | $\frac{10}{21} \times \frac{14}{15}=$ |
| $\frac{3}{4} \times \frac{12}{13}=$ | $\frac{2}{3} \times \frac{15}{16}=$ | $\frac{5}{8} \times \frac{2}{5}=$ | $\frac{6}{21} \times \frac{9}{10}=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Multiplying Fractions Game Board

| $\frac{1}{10}$ | $\frac{7}{15}$ | $\frac{1}{8}$ | $\frac{1}{3}$ |
| :---: | :---: | :---: | :---: |
|  | $\frac{2}{5}$ |  | $\frac{3}{20}$ |
| $\frac{9}{13}$ | $\frac{3}{16}$ | $\frac{4}{9}$ |  |
| $\frac{3}{10}$ | $\frac{5}{8}$ | $\frac{3}{5}$ | $\frac{1}{4}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Multiplication of Fractions 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks (for erasers)

Decks of cards
Vocabulary Notebooks
Activity at end of lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What are the steps you complete to add fractions? What are the steps you complete to subtract fractions? What do you know about multiplying fractions? If you were to multiply the denominators in this problem, $\frac{3}{4} \times \frac{1}{5}=$, you would have a new denominator of 20 . You would then multiply the numerators and have 3. The product would be $\frac{3}{20}$.

## Content (the "Meat")

## Problem of the Day

If you know your multiplication facts, how will that help you solve a division problem?

## Fact Practice

## Fore-header

1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.
2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest
3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead
4. The referee multiplies the two numbers together and states the answer
5. Each player looks at the other person's exposed number and names his/her own number
6. Person who wins (accuracy and time), collects both cards
7. Play continues until all cards are gone.
8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in "teaching to learn".

| Math Vocabulary |
| :--- |
| Word for today: numerators |
| Description: Numerator is a term we use to describe the top numbers in a fraction. When |
| you multiply a fraction you simply multiply the numerator times the numerator. The total is |
| placed as the numerator of the answer. You must also reduce fractions to the lowest terms |
| in the answer. |
| Vocabulary Notebook Sample: |
| New Word <br> numerator |
| My Description <br> The top number of a fraction that tells you <br> how much of the whole you have |
| Personal Connection $1 / 4$ and $3 / 4$ the numerators are 1 and 3. |
| $\frac{3}{8} \frac{5}{8}$ |

## Activity <br> Fractions

## Multiplication of Fractions

When you are multiplying fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are multiplying fractions are written horizontally: For example:

$$
1 / 2 \times 1 / 4=
$$

Unlike addition and fractions that require the denominators to be the same, in multiplication that is not the case. It is perfectly okay for the denominators are different.
In the multiplication of fractions the operation is relatively simple: numerator times
numerator, and denominator times denominator. So in the example above, $1 \times 1=1$, and 2 times 4 equals 8 so the answer would be $1 / 8$. In this particular example, the answer (product) would be in its simplest terms, so you would be finished. If the product was not in the simplest terms, you would want to reduce the product to its lowest terms.
One of the interesting things about multiplication of fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, to ensure that your answer will be in its simplest terms. For example:

$$
\frac{3}{4} \times \frac{8}{15}=
$$

will give you a product of $\frac{24}{60}$. Obviously that would need to be reduced to $\frac{2}{5}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 15.3 and 15 have a common divisor, 3 . Three is divided be three which equals 1 , and 15 can be divided by 3 and equals 5 . So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5 . Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4. These two numbers also have a common divisor, 4.

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

Four will go into 4 one time, and into the 8 , two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4} \times \frac{8}{15}=$ to $\frac{1}{1} \times \frac{2}{5}$ and once multiplied, the answer is in its simplest terms.
Work several problems with the students on the board so they understand the process.

## Multiplying Fractions

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Multiplying Fractions cards and game board.
3. Shuffle the cards and place between the players.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it.
5. Player 2 continues play in the same way.
6. Game is over when all answers have been covered.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Multiplication of Fractions

| $\frac{1}{6} \times \frac{3}{5}=$ | $\frac{3}{5} \times \frac{5}{9}=$ | $\frac{8}{15} \times \frac{3}{4}=$ | $\frac{5}{12} \times \frac{9}{25}=$ |
| :---: | :---: | :---: | :---: |
| $\frac{3}{10} \times \frac{5}{8}=$ | $\frac{3}{4} \times \frac{8}{9}=$ | $\frac{2}{3} \times \frac{9}{10}=$ | $\frac{12}{25} \times \frac{15}{24}=$ |
| $\frac{4}{5} \times \frac{5}{6}=$ | $\frac{3}{3} \times \frac{7}{10}=$ | $\frac{10}{21} \times \frac{14}{12}=$ |  |
| $\frac{2}{4} \times \frac{12}{13}=$ | $\frac{5}{3} \times \frac{15}{16}=$ | $\frac{2}{8}=\frac{6}{5} \times \frac{9}{10}=$ |  |

$4^{\text {th }}-5^{\text {th }}$ Grade Multiplying Fractions Game Board

| $\frac{1}{10}$ | $\frac{7}{15}$ | $\frac{1}{8}$ | $\frac{1}{3}$ |
| :---: | :---: | :---: | :---: |
|  | $\frac{2}{5}$ |  | $\frac{3}{20}$ |
| $\frac{9}{13}$ | $\frac{3}{16}$ | $\frac{4}{9}$ |  |
| $\frac{3}{10}$ | $\frac{5}{8}$ | $\frac{3}{5}$ | $\frac{1}{4}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Domino Fractions |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Dice

Vocabulary Notebooks
Socks (for erasers)
Activity at the end of the lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills working with fractions. |

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What are the steps you complete to add fractions? What are the steps you complete to subtract fractions? What do you know about multiplying fractions? If you were to multiply the denominators in this problem, $\frac{3}{4} \times \frac{1}{5}=$, you would have a new denominator of 20 . You would then multiply the numerators and have 3. The product would be $\frac{3}{20}$. Write several multiplication problems on the board and have students come to the board and solve them.

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Study the number sentence below. Write a story to match the number sentence. $48 \div 6=$ | *Activity $\rightarrow$ Teachable Moment(s) throughout <br> During the lesson check in with students repeatedly. Check in about what is |
| Fact Practice <br> Spokes on a Wheel <br> 1. Divide students into pairs <br> 2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire) <br> 3. Have students choose to put a 6,7 or 8 in the center circle <br> 4. Student rolls two dice and adds the pips (dots) <br> 5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$ <br> 6. Process continues until all spokes have an equation | happening and what they are thinking. <br> Take advantage of any teachable moments <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the |


| Math Vocabulary |  |
| :---: | :---: |
| Word for Today: equivalent fractions |  |
| Description: Equivalent fractions is a math term that describes two fractions that have the same value even though they are not represented with the same fraction. For example, if you have $1 / 2$ of a pizza, you could also have $\frac{2}{4}, \frac{3}{6}, \frac{4}{8}$, or $\frac{5}{10}$. These are all equivalent fractions. No matter how you write it, you have $1 / 2$ of all that there is. When you understand equivalent fractions it is easier to reduce fractions to the simplest terms. |  |
| Students review Vocabulary Notebook, add information as necessary. Vocabulary Notebook Sample: |  |
| New Word equivalent fractions | My Description <br> $1 / 2$ and $\frac{100}{200}$ are equivalent fractions |
| Personal Connection | Drawing |
| My sister and I had equivalent fractional parts of the pizza. | $\frac{4}{8}=\frac{2}{4}=\frac{1}{2}$ |

## Activity <br> Fractions

## Multiplication of Fractions

When you are multiplying fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are multiplying fractions are written horizontally: For example:

$$
1 / 2 \times 1 / 4=
$$

Unlike addition and fractions that require the denominators to be the same, in multiplication that is not the case. It is perfectly okay for the denominators are different.
In the multiplication of fractions the operation is relatively simple: numerator times numerator, and denominator times denominator. So in the example above, $1 \times 1=1$, and 2 times 4 equals 8 so the answer would be $1 / 8$. In this particular example, the answer (product) would be in its simplest terms, so you would be finished. If the product was not in the simplest terms, you would want to reduce the product to its lowest terms.
One of the interesting things about multiplication of fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, to ensure that your answer will be in its simplest terms. For example:

$$
\frac{3}{4} \times \frac{8}{15}=
$$

will give you a product of $\frac{24}{60}$. Obviously that would need to be reduced to $\frac{2}{5}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 15.3 and 15 have a common divisor, 3 . Three is divided be three which equals 1 , and 15 can be divided by 3 and equals 5 . So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5 . Sometimes there is no common divisor for a
student become the teacher.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4 . These two numbers also have a common divisor, 4. Four will go into 4 one time, and into the 8 , two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4} \times \frac{8}{15}=$ to $\frac{1}{1} \times \frac{2}{5}$ and once multiplied, the answer is in its simplest terms.
Work several problems with the students on the board so they understand the process.

## Domino Fractions

## Directions:

1. Divide students into pairs.
2. Give each pair as set of Double 9 Dominoes. Remove any domino that has zero spots on $1 / 2$ of it.
3. Turn the dominoes face down.
4. Player 1 draws 2 dominoes, creates a multiplication problem out of the two dominoes and solves the problem they have created.
5. If the answer is correct, player gets 1 point.
6. Player 2 continues play in the same way.
7. Game is over when one of the players has reached 15 points.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Domino Fractions 2 |
| Focus: | Fractions |

## Materials:

| White boards | Vocabulary Notebooks |
| :--- | :--- |
| Crayolas | Dice |

Activity at the end of the lesson plan
Socks (use for erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you |
| use your knowledge of fractions in the real world? What are the steps you complete to add fractions? What are the steps |
| you complete to subtract fractions? What do you know about multiplying fractions? If you were to multiply the |
| denominators in this problem, $\frac{3}{4} \times \frac{1}{5}=$, you would have a new denominator of 20. You would then multiply the numerators |
| and have 3. The product would be $\frac{3}{20}$. Write several multiplication problems on the board and have students come to the |
| board and solve them. |

## Content (the "Meat")

## Problem of the Day

List 10 different fruits, vegetables or meats that you could buy at the grocery store. My each item on the list, tell whether these would be weight by ounces or pounds.

## Fact Practice

## Multiplication Ladder

1. Give each student a white board (include marker or crayola)
2. Student should draw a ladder like the one below

> *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the

cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 15.3 and 15 have a common divisor, 3 . Three is divided be three which equals 1 , and 15 can be divided by 3 and equals 5 . So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5 . Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4. These two numbers also have a common divisor, 4. Four will go into 4 one time, and into the 8 , two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4} \times \frac{8}{15}=$ to $\frac{1}{1} \times \frac{2}{5}$ and once multiplied, the answer is in its simplest terms.
Work several problems with the students on the board so they understand the process.

## Domino Fractions

## Directions:

1. Divide students into pairs.
2. Give each pair as set of Double 9 Dominoes. Remove any domino that has zero spots on $1 / 2$ of it.
3. Turn the dominoes face down.
4. Player 1 draws 2 dominoes, creates a multiplication problem out of the two dominoes and solves the problem they have created.
5. If the answer is correct, player gets 1 point.
6. Player 2 continues play in the same way.
7. Game is over when one of the

## Closing <br> Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Mixed Multiplication |
| Focus: | Fractions |

## Materials:

White boards Vocabulary Notebooks

Crayolas Cards
Activities at the end of this lesson plan Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| Fractions are a key part of being prepared to understand algebra. What is meant by a mixed number? If you wanted to <br> change a mixed number into a fraction, what type of a fraction would it become? Why would you want to work with a <br> mixed fraction? How would converting a mixed number to an improper fraction be helpful in multiplication of fractions? |

## Content (the "Meat")

## Problem of the Day

The chorus has 94 members. It is going to be taken to the concert in a van that will hold 8 people. How many vans will they need?

## Fact Practice

## Target

1. Divide students into trios
2. Each trio needs a deck of cards without face cards and jokers
3. Place the cards face up in a TicTac Toe Grid
4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1 )
5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide
6. Each card may be used only one time in the equation
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck
9. Player with the most cards at the end of the game win

## *Activity $\rightarrow$ Teachable Moment(s) throughout

 During the lesson check in with students repeatedly.Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.


Activity
Fractions

## Multiplication of Mixed Numbers

The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
The first thing that students must understand is that every whole number can be written as a fraction by placing a " 1 " as the denominator. So, the number 8 can also be written as $\frac{8}{1}$.
Once that is done, the problem is easy to complete because the problem is solved with numerator times numerator and denominator times denominator.
The first mixed number multiplication problems we will do will require only this process.
Complete several problems on the board with students.

## Mixed Multiplication (Riddle \#1)

## Directions:

1. Divide students into pairs.
2. Give each pair a Mixed Multiplication Card and Riddle Card.
3. Working together, students solve the problems on the Multiplication Card, locate the answer on the Riddle Card, and write the letter on the line to uncover the riddle.
4. Not all answers will be used in the riddle answer.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {h }}$ Grade Mixed Multiplication Card

$4^{\text {th }}-5^{\text {th }}$ Grade Mixed Multiplication
Riddle \# 1

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | 1 | $1 \frac{1}{3}$ | 1 | $1 \frac{1}{11}$ | $\frac{3}{4}$ |


|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $\frac{4}{5}$ | 2 | 1 | $1 \frac{1}{5}$ | 1 |

Be sure to not share the answer with the students.
First African American President of the United States: Barack Obama

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Mixed Multiplication 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Product Hunt Work Sheet

Vocabulary Notebooks two, 12-sided dice for each pair Sock (for erasers)

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What is meant by a mixed number? If you wanted to change a mixed number into a fraction, what type of a fraction would it become? Why would you want to work with a mixed fraction? How would converting a mixed number to an improper fraction be helpful in multiplication of fractions?

## Content (the "Meat")

## Problem of the Day

The chorus has 94 members. It is going to be taken to the concert in a van that will hold 8 people. How many vans will they need?

## Fact Practice

## Product Hunt

1. Divide students into pairs
2. Each pair needs a Product Hunt sheet (attached to this lesson plans )
3. Player rolls two, 12-sided dice.
4. Player multiplies the two numbers.
5. If the product is not yet covered, then player may cover the product.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

## Math Vocabulary

## Word for Today: simplify

Description: Simplify is a math term that refers to writing a fraction or an equation in its easiest to understand form. When you look at a fraction, while $\frac{75}{150}$ is the same as $1 / 2$, it is just easier to get your head around the concept of $1 / 2$. When the fraction is written as $1 / 2$ it has been simplified.
Create an entry of the term composite in the vocabulary notebook.
Vocabulary Notebook Sample:

| New Word simplify | My Description |
| :--- | :--- |
| Write things in is easiest to understand form. |  |
| Mersonal Connection brother says he is $73 / 4$ year old, I say he <br> is almost 8. | Drawing |
|  | $\frac{9}{18}$ is $\frac{1}{2}$ |

## Activity <br> Fractions

## Multiplication of Mixed Numbers

The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
The first thing that students must understand is that every whole number can be written as a fraction by placing a " 1 " as the denominator. So, the number 8 can also be written as $\frac{8}{1}$.
Once that is done, the problem is easy to complete because the problem is solved with numerator times numerator and denominator times denominator.
The first mixed number multiplication problems we will do will require only this process.
Complete several problems on the board with students.

## Mixed Multiplication (Riddle \#2)

## Directions:

1. Divide students into pairs.
2. Give each pair a Mixed Multiplication Card and Riddle Card.
3. Working together, students solve the problems on the Multiplication Card, locate the answer on the Riddle Card, and write the letter on the line to uncover the riddle.
4. Not all answers will be used in the riddle answer.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

$4^{\text {th }}-5^{\text {th }}$ Grade Mixed Multiplication Card


Riddle \# 2
$4^{\text {th }}-5^{\text {th }}$ Grade Mixed Multiplication

|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| $\frac{5}{8}$ | 1 | $1 \frac{1}{3}$ | $1 \frac{1}{3}$ | 3 |


|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $1 \frac{1}{7}$ | $\frac{4}{5}$ | $1 \frac{1}{2}$ | $1 \frac{1}{2}$ | $3 \frac{4}{7}$ | $1 \frac{1}{3}$ |

Hero of books with Dumbledore, Hermione, and Ron: Harry Potter

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Mixed Multiplication 3 |
| Focus: | Fractions |

## Materials:

White boards Vocabulary Notebooks

Crayolas Decks of cards
Activity at the end of the lesson plan
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the <br> multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students <br> simplify the answer. |

## Content (the "Meat")

| Problem of the Day <br> Joni purchased pink thumb print cookies and chocolate thumb print cookies. She placed 4 cookies in each of 6 bags and had 4 cookies left over. If Joni purchased 16 pink thumb print cookies, how many chocolate thumb print cookies did she buy? How do you know? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| :---: | :---: |
| Fact Practice <br> Draw! <br> 1. Divide students into pairs and give each pair a deck of cards <br> 2. Remove the face cards and jokers from the deck of cards. <br> 3. Shuffle the deck. <br> 4. Decide who will go first. <br> 5. First player draws two cards. <br> 6. Student multiplies the cards. <br> 7. Student writes his/her problem on the white board, writing a complete number sentence. <br> 8. Students take turns drawing and creating problems. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: reduce <br> Description: The mathematical term, reduce, is used when we discuss the answer in an | It is important to review academic math vocabulary often throughout the day. |

addition, subtraction, multiplication, and/or division problem when we are working with fractions. Fractions are reduced when they are written in the simplest terms. For example, $\frac{4}{8}$ is not a fraction in its lowest terms, $1 / 2$ is. Reducing the fractions is part of the process. Include the word reduce in the math Vocabulary Notebook.

Vocabulary Notebook Sample:

| New Wordreduce | My Description <br> to put in its simplest form |
| :--- | :--- |
| Personal Connection <br> Please reduce that fraction to its lowest <br> terms. | Drawing <br> 10 |

## Activity <br> Fractions

## Multiplication of Mixed Numbers

The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
$51 / 2$ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 $x 5=10+1$ for a total of $\frac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the $X(\backslash$ or $/$ ), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

## Mixed Multiplication \#3

## Directions:

1. Divide students into pairs.
2. Give each pair a Mixed Multiplication card and Answer Game Board.
3. Working together, pair solves the problems on the Mixed Multiplication Card, and then marks off the answers on the game board.
4. Activity is complete when all answers on the game board are marked off.

Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}$ and $5^{\text {th }}$ Grade Mixed Multiplication \#2
$2 \times 2 \frac{1}{3}=$
$3 \times 5 \frac{1}{5}=$
$9 \times 3 \frac{2}{3}=$
$8 \times 9 \frac{1}{10}=$
$4 \times 5 \frac{1}{8}=$
$6 \times 3 \frac{1}{6}=$
$5 \times 6 \frac{5}{8}=$
$3 \times 9 \frac{1}{3}=$
$7 \times 1 \frac{3}{4}=$
$7 \times 2 \frac{3}{5}=$
$4 \times 2 \frac{1}{2}=$
$7 \times 2 \frac{1}{7}=$
$4^{\text {th }}-5^{\text {th }}$ Grade $;$ Mixed Number \#2 Answer Card

| $4 \frac{2}{3}$ | $15 \frac{3}{5}$ | 33 |
| :---: | :---: | :---: |
| $72 \frac{4}{5}$ | $20 \frac{1}{2}$ | 19 |
| $33 \frac{1}{8}$ | 28 | $12 \frac{1}{4}$ |
| $18 \frac{1}{5}$ | 10 | 15 |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Mixed Multiplication 4 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Activity at the end of the lesson plan
Notebooks
Double 9 Dominoes
Socks (use for erasers)

## Opening

State the objective
Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students simplify the answer.

## Content (the "Meat")

## Problem of the Day

Use the digits below to create a fact family (remember that this will be four problems).
$9 \quad 54 \quad 6$

## Fact Practice

## Spots and Dots

There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

Players sit across from each other.
Dominoes are between them, face (or spots) down.
Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is


Multiplication: $2 \times 3=6$

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Word for Today: Z pattern $\quad$ Math Vocabulary |
| :--- | :--- |
| Description: A Z pattern is a way to change fractions quickly into an equivalent fraction once | you have found the common denominator. For example: if you need to change $1 / 2$ into $6^{6 h} \mathrm{~s}$, you could use the $Z$ pattern. You would begin by writing the two fractions this way:

$$
\frac{1}{2}=\frac{-}{6}
$$

Step one is to ask yourself how many times 2 will go into 6 (answer is 3 ), and then $Z$ up to the numerator of 1 , multiplying it by the 3 you found when you divided 2 into 6 , finding the answer of 3 and writing it in the space above of the 6 .

Review your entry for the descriptive term "Z pattern".
Vocabulary Notebook Sample:

| New Word <br> Z pattern | My Description <br> Looks like a Z or the mirror image of the $Z$ tells you to zig zag |
| :---: | :---: |
| Personal Connection <br> $\mathrm{A} Z$ pattern makes finding equal fractions easy. | Drawing $\frac{2}{3} \longleftrightarrow \frac{4}{6}$ |

## Activity <br> Fractions

## Multiplication of Mixed Numbers

The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
$51 / 2$ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 $x 5=10+1$ for a total of $\frac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the $X($ or $/$ ), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

## Mixed Multiplication \#4 <br> Directions:

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

1. Divide students into pairs.
2. Give each pair a Mixed Multiplication card and Answer Game Board.
3. Working together, pair solves the problems on the Mixed Multiplication Card, and then marks off the answers on the game board.
4. Activity is complete when all answers on the game board are marked off.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity.

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Double 9 Dominoes



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$4^{\text {th }}$ and $5^{\text {th }}$ Grade Mixed Multiplication \#2
$2 \times 2 \frac{1}{3}=$
$3 \times 5 \frac{1}{5}=$
$9 \times 3 \frac{2}{3}=$
$8 \times 9 \frac{1}{10}=$
$4 \times 5 \frac{1}{8}=$
$6 \times 3 \frac{1}{6}=$
$5 \times 6 \frac{5}{8}=$
$3 \times 9 \frac{1}{3}=$
$7 \times 1 \frac{3}{4}=$
$7 \times 2 \frac{3}{5}=$
$4 \times 2 \frac{1}{2}=$
$7 \times 2 \frac{1}{7}=$
$4^{\text {th }}-5^{\text {th }}$ Grade Mixed Number \#2 Answer Card

| $4 \frac{2}{3}$ | $15 \frac{3}{5}$ | 33 |
| :---: | :---: | :---: |
| $72 \frac{4}{5}$ | $20 \frac{1}{2}$ | 19 |
| $33 \frac{1}{8}$ | 28 | $12 \frac{1}{4}$ |
| $18 \frac{1}{5}$ | 10 | 15 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's My Product? |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Decks of cards

Vocabulary Notebooks
6 -sided dice; 12 -sided dice
Socks (use as erasers)

Activity at end of the lesson plan

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the |
| multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students |
| simplify the answer. |

## Content (the "Meat")

Problem of the Day
Jorge wants to display his Hot Wheels collection. When he places his cars in groups of 2, 4 and 7 , there is one car left over. When he places the cars in groups of 3 and 9 , he has two cars left over. What is the smallest number of cars that Steven could have in his collection? How do you know?

Fact Practice
Fact Family
A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members:
$9 \times 4=36$
$4 \times 9=36$
$36 \div 4=9$
$36 \div 9=4$
Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families

## Math Vocabulary

## Word for Today: product

Description: Product is the answer you find when you work with a multiplication problem

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

It is important to review academic math vocabulary often throughout the day.
whether it is whole number, fractions, or whole numbers and fractions. Write several fraction multiplication problems on the board and ask students to solve for the product and then be sure that it is reduced to its lowest or simplest terms.

Vocabulary Notebook Sample:

| New Wordproduct | My Description <br> the answer to a multiplication problem |
| :--- | :--- |
| Personal Connection | Drawing |
| The product of $1 / 2 \times 3 / 4$ is $3 / 8$ |  |$\quad \frac{1}{\mathbf{8}} \times \frac{\mathbf{5}}{\mathbf{8}} \frac{\mathbf{5}}{\mathbf{8}}$.

## Activity

Fractions

## Multiplication of Mixed Numbers

The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
$51 / 2$ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 $x 5=10+1$ for a total of $\frac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the $X(\backslash$ or $/$ ), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

## What's My Product?

## Directions:

1. Divide students into pairs.
2. Give each pair a What's My Product deck and Game Board and one 6-sided die. Give students white boards as well.
3. Shuffle the cards and place them face down in between the students.
4. Player 1 draws a card, completes the problem. If the answer is correct, player rolls the die and moves that many spaces.
5. Player 2 continues play in the same way.
6. Game is over when one player reaches the "finish" square.

Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans
$4^{\text {th }}-5^{\text {th }}$ Grade What's My Product Game Board Finish $\downarrow$


$4^{\text {th }}-5^{\text {th }}$ Grade What's My Product? Cards


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's My Product 2 |
| Focus: | Fractions |

## Materials:

White boards Vocabulary Notebooks

Crayolas Decks of cards
Activity at the end of the lesson plan
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with fractions. |
| Gain prior knowledge by asking students the following questions |
| When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the |
| multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students |
| simplify the answer. |


| Content (the "Meat") |
| :--- |
| Problem of the Day |
| Jack and his 2 friends mowed lawns for a month. Last month Jack and his friends earned |
| $\$ 467$. If Jack divides the money evenly among himself and his 2 friends, and they decide that |
| the left over money will go to supplies, how much money will be left for supplies. |

## Fact Practice Multiples

Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas ( 150 chart).

1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice)
2. Mark all multiples of the number and then pass off to the next person.
3. Player may mark the same number.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Math Vocabulary |  |
| :---: | :---: |
| Word for Today: $\mathbf{Z}$ pattern |  |
| Description: $Z$ pattern is a term we use to describe the process for translating fractions into equivalent fractions. This is a pattern that describes the process of finding equivalent fractions. Turn to a partner and explain the process to them. Then review your Vocabulary Notebook entry. Add to it if you need to do so. |  |
| Vocabulary Notebook Sample: |  |
| New Word | My Description |
| Z pattern | A pattern that you use to find equivalent fractions |
| Personal Connection | Drawing |
| After using the $Z$ pattern I found that $1 / 2$ is equal to $\frac{5}{10}$. | $\frac{1}{2} \longrightarrow \frac{5}{10}$ |

## Activity <br> Fractions

## Multiplication of Mixed Numbers

The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
$51 / 2$ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 $x 5=10+1$ for a total of $\frac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the $X$ ( $\backslash$ or / ), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

## What's My Product?

## Directions:

1. Divide students into pairs.
2. Give each pair a What's My Product deck and Game Board and one 6-sided die. Give students white boards as well.
3. Shuffle the cards and place them face down in between the students.
4. Player 1 draws a card, completes the problem. If the answer is correct, player rolls the die and moves that many spaces.
5. Player 2 continues play in the same way.
6. Game is over when one player reaches the "finish" square.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice-Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

$4^{\text {th }}-5^{\text {th }}$ Grade What's My Product Game Board


## $4^{\text {th }}-5^{\text {th }}$ Grade What's My Product? Cards



| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grade |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below

| Opening |
| :---: |
| State the objective |
| Today we are going to have fun playing games that we learned this week. |

## Content (the "Meat") <br> Activity

Today is a review day. Students should select from the following list of activities:

Multiplying Fractions<br>Domino Fractions<br>Mixed Multiplication Riddle \#1<br>Mixed Multiplication Riddle \#2<br>Mixed Multiplication \#2<br>What's My Product?

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Division of Fractions |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Deck of cards

Activities at end of lesson plan
Vocabulary Notebooks
Socks (use as erasers)

Opening
State the objective
Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? What is the recipe for dividing fractions? What does it mean to invert a fraction? When you look at this division problem, which of the fractions is the divisor? $\frac{3}{4} \div \frac{1}{2}=$.

## Content (the "Meat")

## Problem of the Day

Sue solved the problem shown below and go the answer of 164. Is her answer correct?
Explain how you know.
$985 \div 6=$

## Multiplication War

- Divide students into pairs. Give each pair a deck of cards without face cards and jokers.
- Shuffle the deck and divide the cards evenly between the two players
- On go, the players turn over the cards at the same time
- Students multiply the 2 numbers that have been turned up
- First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer
- At the end of round, students may reshuffle the pile of cards that they have
- Play can continue until one player has all cards or time has called


## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in "teaching to learn".

| Math Vocabulary <br> Word for Today: invert <br> Description: A fraction has two numbers, a numerator, the number on top, and the <br> denominator, the number on the bottom. When you divide fractions you must invert the <br> divisor and then multiply numerator times numerator and denominator times denominator. <br> When you invert a fraction it will change from this: $1 / 2$ to $\frac{2}{1}$. In other words, the denominator <br> becomes the numerator and the numerator becomes the denominator. If you have a whole <br> number like 2 or 4 , when they are inverted they look like $1 / 2$ and $1 / 4$. All whole numbers <br> have an unseen 1 underneath them as a denominator. <br> Enter the word invert in your Vocabulary Notebook. Share your entry with a peer. <br> Vocabulary Notebook Sample: <br> New Word <br> invert <br> Personal Connection <br> $3 / 8$ |
| :--- |

Division of Fractions Activity
Division is the reciprocal of multiplication. When you are dividing fractions, set up is very
important. Unlike addition and subtraction of fractions that need to be written vertically, the
problems when you are dividing fractions are written horizontally: For example:

$$
1 / 2 \div 1 / 4=
$$

Unlike addition and fractions that require the denominators to be the same, in division that is not the case. It is perfectly okay for the denominators to be different.
In the division of fractions the operation is relatively simple as long as you remember to invert the fraction on the right, the divisor.
When you do that, you would change the sign from division to multiplication. In the division problem above, you would rewrite it to be:

$$
\frac{1}{2} \times \frac{4}{1}=
$$

Just like in multiplication you can simply multiply numerator times numerator, and denominator times denominator. So in the example above, $1 \times 4=4$, and 2 times 1 equals 2 so the answer would be $\frac{4}{2}$. In this particular example, the answer (product) would not be in its simplest terms, so you would not be finished. You would need to reduce the fraction to the whole number, 2.
One of the interesting things about dividing fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, BUT AFTER

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.
you have inverted the divisor, to ensure that your answer will be in its simplest terms. For example:

$$
\frac{3}{4} \div \frac{6}{7}=
$$

would become:

$$
\frac{3}{4} \times \frac{7}{6}=
$$

and give you a product of $\frac{21}{24}$. Obviously that would need to be reduced to $\frac{7}{8}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 6.3 and 6 have a common divisor, 3 . Three is divided be three which equals 1 , and 6 can be divided by 3 and equals 2 . So before we multiply the fraction, we are going to change the 3 to 1 and the 6 to 2 . Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the $X$, the $/$, "connects" the 4 and the 7 . There is not common multiple for these two numbers. Once you have checked and changed where you could, you know have a problem that looks like this:

$$
\frac{1}{4} \times \frac{7}{2}=
$$

When you multiply this you find the answer of $\frac{7}{8}$ and you do not need to simplify as it is already done.
Work several problems with the students on the board so they understand the process.

## Dividing Fractions

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Dividing Fractions cards and game board.
3. Shuffle the cards and place between the players.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it.
5. Player 2 continues play in the same way.
6. Game is over when all answers have been covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Division of Fractions

| $\frac{1}{6} \div \frac{3}{5}=$ | $\frac{3}{5} \div \frac{6}{10}=$ | $\frac{8}{15} \div \frac{4}{10}=$ | $\frac{5}{12} \div \frac{5}{8}=$ |
| :---: | :---: | :---: | :---: |
| $\frac{3}{10} \div \frac{5}{8}=$ | $\frac{3}{4} \div \frac{9}{10}=$ | $\frac{3}{4} \div \frac{7}{10}=$ | $\frac{12}{25} \div \frac{4}{5}=$ |
| $\frac{4}{5} \div \frac{5}{6}=$ | $\frac{2}{3} \div \frac{5}{6}=$ | $\frac{3}{10} \div \frac{2}{5}=$ | $\frac{10}{21} \div \frac{2}{3}=$ |
| $\frac{2}{4} \div \frac{5}{12}=$ | $\frac{2}{3} \div \frac{6}{15}=$ | $\frac{2}{8}=\frac{6}{5} \div \frac{9}{10}=$ |  |

$4^{\text {th }}-5^{\text {th }}$ Grade Dividing Fractions Game Board

| $\frac{5}{18}$ | 1 |  | $1 \frac{1}{3}$ | $\frac{2}{3}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | $\frac{12}{25}$ |  | $\frac{5}{6}$ | $\frac{3}{5}$ |
| $\frac{24}{25}$ | $\frac{4}{5}$ |  | $\frac{1}{14}$ | $\frac{3}{4}$ |
| $1 \frac{4}{5}$ | $1 \frac{2}{3}$ |  | $1 \frac{9}{16}$ | $\frac{20}{63}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Division of Fractions 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Socks (for erasers)

Decks of cards
Vocabulary Notebooks
Activity at end of lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? What is the recipe for dividing fractions? What does it mean to invert a fraction? When you look at this division problem, which of the fractions is the divisor? $\frac{3}{4} \div \frac{1}{2}=$.

## Content (the "Meat")

## Problem of the Day

Marnie say that the quotient of the problem shown below has a 0 (zero) in it. Explain how she could know this. Solve the problem for the correct answer.

## Fact Practice

## Fore-header

1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.
2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest
3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead
4. The referee multiplies the two numbers together and states the answer
5. Each player looks at the other person's exposed number and names his/her own number
6. Person who wins (accuracy and time), collects both cards
7. Play continues until all cards are gone.
8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee

## Math Vocabulary

Word for Today: invert

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in "teaching to learn".
It is important to review academic math vocabulary

Description: A fraction has two numbers, a numerator, the number on top, and the denominator, the number on the bottom. When you divide fractions you must invert the divisor and then multiply numerator times numerator and denominator times denominator. When you invert a fraction it will change from this: $1 / 2$ to $\frac{2}{1}$. In other words, the denominator becomes the numerator and the numerator becomes the denominator. If you have a whole number like 2 or 4 , when they are inverted they look like $1 / 2$ and $1 / 4$. All whole numbers have an unseen 1 underneath them as a denominator.
Enter the word invert in your Vocabulary Notebook. Share your entry with a peer.

Vocabulary Notebook Sample:

| New Wordinvert | My Description <br> turn upside down |
| :--- | :--- |
| Personal Connection | Drawing |
| $3 / 8$ can be inverted to $\frac{8}{3}$. |  |

## Activity <br> Fractions

## Division of Fractions

Division is the reciprocal of multiplication. When you are dividing fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are dividing fractions are written horizontally: For example:

$$
1 / 2 \div 1 / 4=
$$

Unlike addition and fractions that require the denominators to be the same, in division that is not the case. It is perfectly okay for the denominators to be different.
In the division of fractions the operation is relatively simple as long as you remember to invert the fraction on the right, the divisor.
When you do that, you would change the sign from division to multiplication. In the division problem above, you would rewrite it to be:

$$
\frac{1}{2} \times \frac{4}{1}=
$$

Just like in multiplication you can simply multiply numerator times numerator, and denominator times denominator. So in the example above, $1 \times 4=4$, and 2 times 1 equals 2 so the answer would be $\frac{4}{2}$. In this particular example, the answer (product) would not be in its simplest terms, so you would not be finished. You would need to reduce the fraction to the whole number, 2.
One of the interesting things about dividing fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, BUT AFTER you have inverted the divisor, to ensure that your answer will be in its simplest terms. For example:
often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

$$
\frac{3}{4} \div \frac{6}{7}=
$$

would become:

$$
\frac{3}{4} \times \frac{7}{6}=
$$

and give you a product of $\frac{21}{24}$. Obviously that would need to be reduced to $\frac{7}{8}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 6.3 and 6 have a common divisor, 3 . Three is divided be three which equals 1 , and 6 can be divided by 3 and equals 2 . So before we multiply the fraction, we are going to change the 3 to 1 and the 6 to 2 . Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the $/$, "connects" the 4 and the 7 . There is not common multiple for these two numbers. Once you have checked and changed where you could, you know have a problem that looks like this:

$$
\frac{1}{4} \times \frac{7}{2}=
$$

When you multiply this you find the answer of $\frac{7}{8}$ and you do not need to simplify as it is already done.
Work several problems with the students on the board so they understand the process.

## Dividing Fractions

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Dividing Fractions cards and game board.
3. Shuffle the cards and place between the players.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it.
5. Player 2 continues play in the same way.
6. Game is over when all answers have been covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Division of Fractions

| $\frac{1}{6} \div \frac{3}{5}=$ | $\frac{3}{5} \div \frac{6}{10}=$ | $\frac{8}{15} \div \frac{4}{10}=$ | $\frac{5}{12} \div \frac{5}{8}=$ |
| :---: | :---: | :---: | :---: |
| $\frac{3}{10} \div \frac{5}{8}=$ | $\frac{3}{4} \div \frac{9}{10}=$ | $\frac{3}{4} \div \frac{7}{10}=$ | $\frac{12}{25} \div \frac{4}{5}=$ |
| $\frac{4}{5} \div \frac{5}{6}=$ | $\frac{3}{3} \div \frac{5}{6}=$ | $\frac{2}{10}=\frac{10}{5} \div \frac{2}{3}=$ |  |
| $\frac{3}{4} \div \frac{5}{12}=$ | $\frac{2}{3} \div \frac{6}{15}=$ | $\frac{5}{8} \div \frac{2}{5}=$ | $\frac{6}{21} \div \frac{9}{10}=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Dividing Fractions Game Board

| $\frac{5}{18}$ | 1 |  | $1 \frac{1}{3}$ | $\frac{2}{3}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | $\frac{12}{25}$ |  | $\frac{5}{6}$ | $\frac{3}{5}$ |
| $\frac{24}{25}$ | $\frac{4}{5}$ |  | $\frac{1}{14}$ | $\frac{3}{4}$ |
| $1 \frac{4}{5}$ | $1 \frac{2}{3}$ |  | $1 \frac{9}{16}$ | $\frac{20}{63}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Domino Fractions |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Dice

Vocabulary Notebooks
Socks (for erasers)
Activity at the end of the lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills working with fractions. |

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? What is the recipe for dividing fractions? Write several division of fractions on the board. Have students walk through the process. Remind them what it means to invert the divisor?

## Content (the "Meat")

## Problem of the Day

Is the number shown below divisible by 3 ?

## 534

## Fact Practice

## Spokes on a Wheel

1. Divide students into pairs
2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire)
3. Have students choose to put a 6,7 or 8 in the center circle
4. Student rolls two dice and adds the pips (dots)
5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$
6. Process continues until all spokes have an equation
*Activity $\rightarrow$ Teachable Moment(s) throughout
During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Math Vocabulary |  |
| :---: | :---: |
| Word for Today: equivalent fractions |  |
| Description: Equivalent fractions is a math same value even though they are not repre you have $1 / 2$ of a pizza, you could also have fractions. No matter how you write it, you h equivalent fractions it is easier to reduce fra | rm that describes two fractions that have the ted with the same fraction. For example, if $\frac{3}{6}, \frac{4}{8}$, or $\frac{5}{10}$. These are all equivalent $1 / 2$ of all that there is. When you understand ons to the simplest terms. |
| Students review Vocabulary Notebook, add Vocabulary Notebook Sample: | ormation as necessary. |
| New Word equivalent fractions | My Description <br> $1 / 2$ and $\frac{100}{200}$ are equivalent fractions |
| Personal Connection <br> My sister and I had equivalent fractional parts of the pizza. | Drawing $\frac{4}{8}=\frac{2}{4}=\frac{1}{2}$ |

Activity
Fractions

## Division of Fractions

Division is the reciprocal of multiplication. When you are dividing fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are dividing fractions are written horizontally: For example:

$$
1 / 2 \div 1 / 4=
$$

Unlike addition and fractions that require the denominators to be the same, in division that is not the case. It is perfectly okay for the denominators to be different.
In the division of fractions the operation is relatively simple as long as you remember to invert the fraction on the right, the divisor.
When you do that, you would change the sign from division to multiplication. In the division problem above, you would rewrite it to be:

$$
\frac{1}{2} \times \frac{4}{1}=
$$

Just like in multiplication you can simply multiply numerator times numerator, and denominator times denominator. So in the example above, $1 \times 4=4$, and 2 times 1 equals 2 so the answer would be $\frac{4}{2}$. In this particular example, the answer (product) would not be in its simplest terms, so you would not be finished. You would need to reduce the fraction to the whole number, 2.
One of the interesting things about dividing fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, BUT AFTER you have inverted the divisor, to ensure that your answer will be in its simplest terms. For example:

$$
\frac{3}{4} \div \frac{6}{7}=
$$

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
would become:

$$
\frac{3}{4} \times \frac{7}{6}=
$$

and give you a product of $\frac{21}{24}$. Obviously that would need to be reduced to $\frac{7}{8}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 6.3 and 6 have a common divisor, 3 . Three is divided be three which equals 1 , and 6 can be divided by 3 and equals 2 . So before we multiply the fraction, we are going to change the 3 to 1 and the 6 to 2 . Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 4 and the 7 . There is not common multiple for these two numbers. Once you have checked and changed where you could, you know have a problem that looks like this:

$$
\frac{1}{4} \times \frac{7}{2}=
$$

When you multiply this you find the answer of $\frac{7}{8}$ and you do not need to simplify as it is already done.
Work several problems with the students on the board so they understand the process.

## Domino Fractions

Directions:

1. Divide students into pairs.
2. Give each pair as set of Double 9 Dominoes. Remove any domino that has zero spots on $1 / 2$ of it.
3. Turn the dominoes face down.
4. Player 1 draws 2 dominoes, creates a division problem out of the two dominoes and solves the problem they have created.
5. If the answer is correct, player gets 1 point.
6. Player 2 continues play in the same way.
7. Game is over when one of the players has reached 15 points.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Domino Fractions 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Activity at the end of the lesson plan
Dice
$\qquad$

Vocabulary Notebooks
$\qquad$ . Socks (use for erasers)

Dominoes

Sock

## Opening

## State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? What is the recipe for dividing fractions? Write several division of fractions on the board. Have students walk through the process. Remind them what it means to invert the divisor? Have them complete the problem and reduce the answer to the simplest terms.


3. Have student roll 2 dice, total the pips and then multiply that number times each of the numbers in the ladder, writing the total to the right of the number

## Math Vocabulary

## Word for today: reduce

Description: Reduce is the term we use to discuss how to make fractions more manageable. If you have a fraction that is $\frac{150}{300}$, even though the numerator and the denominator are large, the fact is that you still have $1 / 2$ of the whole thing. Understanding how much you have is easier when the fraction has been reduced to its lowest form. To reduce a fraction you do the same to both the numerator and the denominator which allows the relationship to stay in proportion.
Look in your notebook at your entry for the term "reduce". Add any information that you believe makes more sense.
Vocabulary Notebook Sample:

| New Wordreduce | My Description <br> a fraction like $\frac{75}{100}$ is easier to understand <br> when reduced to $\frac{3}{4}$. |
| :--- | :--- |
| Personal Connection <br> If I eat 4 of the eight pieces of pizza, then I <br> have eaten $1 / 2$ of it. | $\frac{4}{8}$ can be reduced to |

## Activity

Fractions

## Division of Fractions

Division is the reciprocal of multiplication. When you are dividing fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are dividing fractions are written horizontally: For example:

$$
1 / 2 \div 1 / 4=
$$

Unlike addition and fractions that require the denominators to be the same, in division that is not the case. It is perfectly okay for the denominators to be different.
In the division of fractions the operation is relatively simple as long as you remember to invert the fraction on the right, the divisor.
When you do that, you would change the sign from division to multiplication. In the division problem above, you would rewrite it to be:
$\frac{1}{2} \times \frac{4}{1}=$

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

Just like in multiplication you can simply multiply numerator times numerator, and denominator times denominator. So in the example above, $1 \times 4=4$, and 2 times 1 equals 2 so the answer would be $\frac{4}{2}$. In this particular example, the answer (product) would not be in its simplest terms, so you would not be finished. You would need to reduce the fraction to the whole number, 2.
One of the interesting things about dividing fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, BUT AFTER you have inverted the divisor, to ensure that your answer will be in its simplest terms. For example:

$$
\frac{3}{4} \div \frac{6}{7}=
$$

would become:

$$
\frac{3}{4} \times \frac{7}{6}=
$$

and give you a product of $\frac{21}{24}$. Obviously that would need to be reduced to $\frac{7}{8}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \"connects" the 3 and the 6 . 3 and 6 have a common divisor, 3 . Three is divided be three which equals 1 , and 6 can be divided by 3 and equals 2 . So before we multiply the fraction, we are going to change the 3 to 1 and the 6 to 2 . Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 4 and the 7 . There is not common multiple for these two numbers. Once you have checked and changed where you could, you know have a problem that looks like this:

$$
\frac{1}{4} \times \frac{7}{2}=
$$

When you multiply this you find the answer of $\frac{7}{8}$ and you do not need to simplify as it is already done.
Work several problems with the students on the board so they understand the process.

## Domino Fractions

## Directions:

1. Divide students into pairs.
2. Give each pair as set of Double 9 Dominoes. Remove any domino that has zero spots on $1 / 2$ of it.
3. Turn the dominoes face down.
4. Player 1 draws 2 dominoes, creates a division problem out of the two dominoes and solves the problem they have created.
5. If the answer is correct, player gets 1 point.
6. Player 2 continues play in the same way.
7. Game is over when one of the players has reached 15 points.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Mixed Division |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Activities at the end of this lesson plan Socks (use as erasers)

## Cards

Vocabulary Notebooks

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What do you know about fractions? What is the recipe for dividing fractions? Write several division of fractions on the board. Have students walk through the process. Remind them what it means to invert the divisor? Have them complete the problem and reduce the answer to the simplest terms.

## Content (the "Meat")

## Problem of the Day

Find the average of the numbers written below. Tell how you know that the answer is correct.

## $\begin{array}{lllll}56 & 65 & 61 & 58 & 75\end{array}$

Fact Practice

## Target

1. Divide students into trios
2. Each trio needs a deck of cards without face cards and jokers
3. Place the cards face up in a TicTac Toe Grid
4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1 )
5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide
6. Each card may be used only one time in the equation
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck
9. Player with the most cards at the end of the game win

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.


Activity

## Fractions

## Division of Mixed Numbers

The division of mixed numbers is similar to the process of dividing simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
$51 / 2$ is a mixed number. In order to divide a fraction that is a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 $x 5=10+1$ for a total of $\frac{11}{2}$. Now you can go through the division process that you have used when it is simply fractions, remembering to invert the divisor or the number on the right and then multiplying. Students should remember to look at numerator and the denominator connected by a piece of the X ( $/$ or $/$ ), and then multiplying.

Work several of these problems on the board with students. Explain that the division of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

## Mixed Division

## Directions:

1. Divide students into pairs.
2. Give each pair a Mixed Division card and Answer Game Board.
3. Working together, pair solves the problems on the Mixed Division Card, and then marks off the answers on the game board.
4. Activity is complete when all answers on the game board are marked off.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}$ and $5^{\text {th }}$ Grade Mixed Division

$$
2 \div 2 \frac{1}{3}=\quad 3 \div 5 \frac{1}{5}=\quad 9 \div 3 \frac{2}{3}=
$$

$8 \div 9 \frac{1}{10}=$
$4 \div 5 \frac{1}{8}=$
$6 \div 3 \frac{1}{6}=$
$5 \div 6 \frac{5}{8}=$
$3 \div 9 \frac{1}{3}=$
$7 \div 1 \frac{3}{4}=$
$7 \div 2 \frac{3}{5}=$
$4 \div 2 \frac{1}{2}=$
$7 \div 2 \frac{1}{7}=$
$4^{\text {th }}-5^{\text {th }}$ Grade $;$ Mixed Number \#2 Answer Card

| $\frac{6}{7}$ | $\frac{15}{26}$ | $2 \frac{5}{11}$ |
| :---: | :---: | :---: |
| $\frac{80}{91}$ | $1 \frac{17}{19}$ | $\frac{32}{41}$ |
| $\frac{40}{53}$ | $\frac{9}{28}$ | 4 |
| $2 \frac{9}{13}$ | $1 \frac{3}{5}$ | $3 \frac{4}{15}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grade |
| Lesson Title: | Mixed Division 2 |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Product Hunt Work Sheet

Vocabulary Notebooks two, 12-sided dice for each pair Sock (for erasers)

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |

## Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What is meant by a mixed number? If you wanted to change a mixed number into a fraction, what type of a fraction would it become? Why would you want to work with a mixed fraction? How would converting a mixed number to an improper fraction be helpful in the division of fractions? When should you invert the divisor?

| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> The answer to Julie's riddle is 177 . First she subtracts 15 from the starting number. Then she added 24. Next she multiplied by 3. What number did Julie start with? How do you know? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in |
| Fact Practice <br> Product Hunt <br> 1. Divide students into pairs <br> 2. Each pair needs a Product Hunt sheet (attached to this lesson plans ) <br> 3. Player rolls two, 12-sided dice. <br> 4. Player multiplies the two numbers. <br> 5. If the product is not yet covered, then player may cover the product. <br> 6. Next player repeats steps 1-3. <br> 7. Winner is determined by who has the most numbers covered. | with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |



Activity
Fractions

## Division of Mixed Numbers

The division of mixed numbers is similar to the process of dividing simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
$51 / 2$ is a mixed number. In order to divide a fraction that is a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 $x 5=10+1$ for a total of $\frac{11}{2}$. Now you can go through the division process that you have used when it is simply fractions, remembering to invert the divisor or the number on the right and then multiplying. Students should remember to look at numerator and the denominator connected by a piece of the X ( $/$ or $/$ ), and then multiplying.

Work several of these problems on the board with students. Explain that the division of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

## Mixed Division

## Directions:

1. Divide students into pairs.
2. Give each pair a Mixed Division card and Answer Game Board.
3. Working together, pair solves the problems on the Mixed Division Card, and then marks off the answers on the game board.
4. Activity is complete when all answers on the game board are marked off.

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

$4^{\text {th }}$ and $5^{\text {th }}$ Grade Mixed Division

$$
2 \div 2 \frac{1}{3}=\quad 3 \div 5 \frac{1}{5}=\quad 9 \div 3 \frac{2}{3}=
$$

$8 \div 9 \frac{1}{10}=$
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$5 \div 6 \frac{5}{8}=$
$3 \div 9 \frac{1}{3}=$
$7 \div 1 \frac{3}{4}=$
$7 \div 2 \frac{3}{5}=$
$4 \div 2 \frac{1}{2}=$
$7 \div 2 \frac{1}{7}=$
$4^{\text {th }}-5^{\text {th }}$ Grade $;$ Mixed Number \#2 Answer Card

| $\frac{6}{7}$ | $\frac{15}{26}$ | $2 \frac{5}{11}$ |
| :---: | :---: | :---: |
| $\frac{80}{91}$ | $1 \frac{17}{19}$ | $\frac{32}{41}$ |
| $\frac{40}{53}$ | $\frac{9}{28}$ | 4 |
| $2 \frac{9}{13}$ | $1 \frac{3}{5}$ | $3 \frac{4}{15}$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Decimal Read |
| Focus: | Decimals |

## Materials:

White boards Vocabulary Notebooks

Crayolas
Decks of cards
Activity at the end of the lesson plan
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with decimals. |
| Gain prior knowledge by asking students the following questions |
| What do you know about decimals? What does a decimal indicate about the numbers to the right of it? What about those <br> to the left? When do you commonly use decimals? If you are reading a number with a decimal point aloud, what do you <br> say when you get to the decimal point? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Jill and Jack earned $\$ 156$ at their neighborhood lemonade stand and divided the money evenly. This week, Jack worked along. He sold popcorn and earned three times as much as he did selling lemonade. How much did Megan earn in all for both weeks? How did you get the answer? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Draw! <br> 1. Divide students into pairs and give each pair a deck of cards <br> 2. Remove the face cards and jokers from the deck of cards. <br> 3. Shuffle the deck. <br> 4. Decide who will go first. <br> 5. First player draws two cards. <br> 6. Student multiplies the cards. <br> 7. Student writes his/her problem on the white board, writing a complete number sentence. <br> 8. Students take turns drawing and creating problems. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: decimal <br> Description: The mathematical term, decimal is used to describe the place value of digits to | It is important to review academic math vocabulary often throughout the day. |

the right of the decimal point, which looks like a period (.). The place value to the right of the decimal point begins with tenths, followed by hundredths, thousandths, ten-thousandths, hundred-thousandths, millionths and so on. When you are reading a number aloud, you say the word "and" to indicate the separation between whole numbers and parts of whole numbers.
Include the word decimal in the math Vocabulary Notebook.

Vocabulary Notebook Sample:

| New Word | My Description <br> a symbol (.) that says everything to the right <br> is less than a whole |
| :--- | :--- |
| Personal Connection <br> When you write 25申 you can write with a <br> decimal point, \$.25. | Drawing |

Activity
Decimals

## Decimals

Just like there is place value to the left of the decimal point (ones, tens, hundreds, thousands, ten-thousands, hundred-thousands, millions, ten-millions, hundred-millions and so on, there is place value to the right of the decimal point as well. To the right of the decimal the place value mirrors that to the left with the exception of ones. The distinction is that the place values to the right have the letters "th" on the end. These place values are tenths, hundredths, thousandths, ten-thousandths, hundred-thousandths, and millionths. When you are reading the number, it is important to remember that the words "and" is used to mean the decimal point. We have bad habits around reading the number 613 as six-hundred and thirteen. This would imply that there is a decimal point between the 6 and the 13, and that the 13 should be labeled hundredths. Caution students to use the word "and" only when referring to the decimal point.
When you are reading a decimal, the position of the last number will determine what place is to be said. In the number
. 3567 , the 7 is in the ten-thousandths place so the number would be read: 3-thousdant five hundred sixty-seven ten-thousandths.

Practice several of these on the board with students so they can get the hang of it. Do not go past millionths. Discuss with students how a decimal is a part of a whole thing, so by the time you've divided something into millionths, you have a very small amount, unless you started with a really large number.

It is also important for students to know which decimal is larger and can indicate that by using the > and < sign. Have students practice this as well.

Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Decimal Read

Directions:

1. Divide students into pairs.
2. Give each pair a set of Decimal Read cards and Game Board.
3. Shuffle the cards and place them face down between the students.
4. Player 1 draws a card and either reads the decimal that is there or compares the two decimals as with larger than or less than.
5. Player 2 continues in the same way.
6. Game is over when all of the cards have been played.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Decimal Read

| 0.64 |  | 0.6872 |  | 1.472 |  | 123.4 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 59.06 |  | 424.013 |  | 9.78215 |  | 1.643 |  |
| 651.3 |  | 82.013 |  | 0.0481 |  | 62.59 |  |
| 0.45 |  | 0.37 | 0.295 | 2.965 | 2.99 | 15.40 | 15.042 |
| 0.075 | 0.0740 | 0.8009 | 0.81 | 7.601 | 7.6010 | 11.643 | 11.75 |
| 0.053 | 0.04 | 1.904 | 19.03 | 4.81 | 4.767 | 12.54 | 12.539 |

## $4^{\text {th }}$-5th Grade Decimal Read Game Board

| sixty-four hundredths | six thousand eigh hundred seventytwo ten thousandths | one and four hundred seventytwo thousandths | one-hundred twenty-three and four tenths |
| :---: | :---: | :---: | :---: |
| fifty-nine and six hundredths | four hundred twenty-four and thirteen thousandths | nine and seventyeight thousand two hundred fifteen hundredthousandths | one and sixhundred fortythree thousandths |
| six hundred fiftyone and three tenths | eighty-two and thousandths | four hundred eighty-one ten thousandths | sixty-two and fiftynine hundredths |
| $<$ | $>$ | $<$ | $>$ |
| > | $<$ | = | $<$ |
| > | $<$ | > | $>$ |


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Decimal Read 2 |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Activity at the end of the lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with decimals. |

## Gain prior knowledge by asking students the following questions

What do you know about decimals? What does a decimal indicate about the numbers to the right of it? What about those to the left? When do you commonly use decimals? If you are reading a number with a decimal point aloud, what do you say when you get to the decimal point? Write several numbers on the board that have decimal points. Have the students read them aloud.

| Content (the "Meat") |  |  |  |
| :--- | :--- | :---: | :---: |
| Study the picture below. Which of the figures are congruent? Which are similar? How can <br> you tell? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in <br> with students repeatedly. <br> Check in about what is <br> happening and what they are <br> thinking. |  |  |
| Take advantage of any |  |  |  |


to be said. In the number
. 3567 , the 7 is in the ten-thousandths place so the number would be read: 3 -thousdant five hundred sixty-seven ten-thousandths.

Practice several of these on the board with students so they can get the hang of it. Do not go past millionths. Discuss with students how a decimal is a part of a whole thing, so by the time you've divided something into millionths, you have a very small amount, unless you started with a really large number.

It is also important for students to know which decimal is larger and can indicate that by using the > and < sign. Have students practice this as well.

## Decimal Read

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Decimal Read cards and Game Board.
3. Shuffle the cards and place them face down between the students.
4. Player 1 draws a card and either reads the decimal that is there or compares the two decimals as with larger than or less than.
5. Player 2 continues in the same way.
6. Game is over when all of the cards have been played.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Double 9 Dominoes



|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |


|  | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |  |  |  |
| $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |
| $\bullet$ | $\bullet$ | $\bullet$ |  |  |  |  |  |




| $\bullet \bullet \bullet$ | $\begin{aligned} & 000 \\ & 000 \end{aligned}$ |  | $\bullet$ | - - |
| :---: | :---: | :---: | :---: | :---: |
| -0 ${ }^{\circ}$ | -00 | -00 | -0* | $\bullet 0$ |
| - ${ }^{\circ}$ | -0 0 | -00 | -0 | -0 |
| -0 ${ }^{\circ}$ | - 0 | -00 | -00 | -00 |


| - ${ }^{-}$ | $\begin{array}{ll} \bullet & 0 \\ 0 & 0 \end{array}$ |  |  |
| :---: | :---: | :---: | :---: |
| - - | -0 0 | -00 | -00 |
| - 0 | - | -00 | -00 |
| - - 0 | -0. | -00 | $\bigcirc$ |

Consult 4 Kids Lesson Plans
$4^{\text {th }}-5^{\text {th }}$ Grade Decimal Read

| 0.64 |  | 0.6872 |  | 1.472 |  | 123.4 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 59.06 |  | 424.013 |  | 9.78215 |  | 1.643 |  |
| 651.3 |  | 82.013 |  | 0.0481 |  | 62.59 |  |
| 0.45 |  | 0.37 | 0.295 | 2.965 | 2.99 | 15.40 | 15.042 |
| 0.075 | 0.0740 | 0.8009 | 0.81 | 7.601 | 7.6010 | 11.643 | 11.75 |
| 0.053 | 0.04 | 1.904 | 19.03 | 4.81 | 4.767 | 12.54 | 12.539 |

## $4^{\text {th }}-5^{\text {th }}$ Grade Decimal Read Game Board

| sixty-four hundredths | six thousand eight hundred seventytwo ten thousandths | one and four hundred seventytwo thousandths | one-hundred twenty-three and four tenths |
| :---: | :---: | :---: | :---: |
| fifty-nine and six hundredths | four hundred twenty-four and thirteen thousandths | nine and seventyeight thousand two hundred fifteen hundredthousandths | one and sixhundred fortythree thousandths |
| six hundred fiftyone and three tenths | eighty-two and thousandths | four hundred eighty-one ten thousandths | sixty-two and fiftynine hundredths |
| $<$ | $>$ | $<$ | $>$ |
| $>$ | $<$ | = | $<$ |
| $>$ | $<$ | $>$ | $>$ |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Addition of Decimals |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Decks of cards

Vocabulary Notebooks
6 -sided dice; 12 -sided dice
Socks (use as erasers)

Activity at end of the lesson plan

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with decimals. |
| Gain prior knowledge by asking students the following questions |
| What do you know about adding decimals? What does it mean to align decimals? If one number has 3 digits to the right of |
| the decimal point and you are adding another number that has only 2 digits to the right of the decimal, what will you do to |
| align the decimals? What do you say when you read a number with a decimal point in it. What are the place values of the |
| numbers to the right of the decimal point? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> If you have two dollar bills, 6 quarters, 2 dimes and 2 nickels, do you have enough money to buy a $\$ 3.50$ pencil box? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $\begin{aligned} & 9 \times 4=36 \\ & 4 \times 9=36 \\ & 36 \div 4=9 \\ & 36 \div 9=4 \end{aligned}$ <br> Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families | with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Word for Today: align decimals Math Vocabulary | It is important to review academic math vocabulary often throughout the day. |

Description: The term "align decimals" refers to the process of lining up decimals if you are going to add or subtract. This means that the decimals must be right under one another in a vertical set-up of the problem. Aligned decimals look this way:
.546
$+12.320$
To align the decimals you can add zeros to the right of the last digit. Students should enter the term in Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word <br> align decimals | My Description <br> vertical alignment of the decimal point |
| :--- | :--- |
| Personal Connection | Drawing |
| I will write the numbers .54 and .34 with <br> the decimals aligned so I can add. | $\underline{.345}$ |

Activity
Decimals

## Addition of Decimals

Adding decimals is exactly like adding whole numbers with one exception. It is essential that you line up decimal point. To do this the problems must be written vertically. So if the problem is $3.5+.456+23.47=$ it is important to rewrite the problem vertically with the decimal aligned. It would look like this:
3.500
.456
$\underline{23.470}$
As you can see, zeros have been added to the end of the numbers to be sure that the decimal points do line up. Adding zeros to the end of a number to the right of a decimal point will not change its value. If you were to eliminate the extra zeros and still align the decimal point, that would be fine, but for students, adding the zeros is usually helpful. In this problem, the next step would be to locate the decimal point in the answer and then add normally. $0+6+0=6$; $0+5+7=12$, write the 2 and carry the $1 ; 5+4+4+1=14$, write the 4 , carry the $1 ; 3+3+1$ $=7$; and splus nothing $=2$. So the answer would be 27.426 or twenty-seven and four hundred twenty-six thousandths.
Work several of these problems on the board with students. Create a recipe checklist so the student will not forget one of the steps. Bring students up to work through the process. When students have an understanding of the process they are ready to play the game.

## Adding With Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair an Adding With Decimals card and game board. Also give students a white board.
3. Shuffle the cards and place face down between the students.

Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
4. Player 1 draws a card, completes the problem (using the white board), and locates the correct answer on the game board. Player marks the answer with a token.
5. Player 2 continues in the same way.
6. Game is over when all cards have been played.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Adding Decimals Cards (Please cut apart)

| $0.264+0.875=$ | $36.88+52.09=$ | $1.64+3.54=$ | $1.37+6.39=$ |
| :---: | :---: | :---: | :---: |
| $0.496+0.785=$ | $52.91+72.68=$ | $748.2+9.5=$ | $2.96+6.30=$ |
| $2.95+16.3=$ | $9.48+7.6=$ | $5.6421+2.2538=$ | $2.5+3.04=$ |
| $2.09+3.08+8=$ | $3.859+4.96+0.426=$ | $6.38+3.9+0.426=$ | $4.95+6+1.8=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Adding Decimals Answer Card

| 1.138 | 88.97 | 5.17 | 7.76 |
| :---: | :---: | :---: | :---: |
| 1.281 | 125.59 | 757.7 | 9.26 |
| 19.25 | 17.08 | 7.8959 | 5.54 |
| 13.17 | 11.819 | 10.706 | 12.75 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Adding Decimals 2 |
| Focus: | Decimals |

## Materials:

White boards Vocabulary Notebooks

Crayolas Decks of cards
Activity at the end of the lesson plan Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with decimals. |
| Gain prior knowledge by asking students the following questions |
| What do you know about adding decimals? What does it mean to align decimals? If one number has 3 digits to the right of |
| the decimal point and you are adding another number that has only 2 digits to the right of the decimal, what will you do to |
| align the decimals? What do you say when you read a number with a decimal point in it. What are the place values of the |
| numbers to the right of the decimal point? Write several decimal addition problems on the board horizontally and have |
| students come up and write the problems vertically, aligning the decimal points and then completing the addition. |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> If Linda knows how to multiply 3 digits by 2 digits, how would she explain how to do the problem step by step to someone else? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice Multiples <br> Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas ( 150 chart). <br> 1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice) <br> 2. Mark all multiples of the number and then pass off to the next person. <br> 3. Player may mark the same number. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary | It is important to review academic math vocabulary |

## Word for Today: align decimals

Description: The term "align decimals" refers to the process of lining up decimals if you are going to add or subtract. This means that the decimals must be right under one another in a vertical set-up of the problem. Aligned decimals look this way:
.546
$+12.320$
To align the decimals you can add zeros to the right of the last digit. Students should enter the term in Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word <br> align decimals | My Description <br> vertical alignment of the decimal point |
| :--- | :--- |
| Personal Connection <br> I will write the numbers .54 and .34 with <br> the decimals aligned so I can add. | Drawing |
|  | $\underline{.345}$ |
| .261 |  |

Activity
Decimals

## Addition of Decimals

Adding decimals is exactly like adding whole numbers with one exception. It is essential that you line up decimal point. To do this the problems must be written vertically. So if the problem is $3.5+.456+23.47=$ it is important to rewrite the problem vertically with the decimal aligned. It would look like this:

$$
3.500
$$

.456
23.470

As you can see, zeros have been added to the end of the numbers to be sure that the decimal points do line up. Adding zeros to the end of a number to the right of a decimal point will not change its value. If you were to eliminate the extra zeros and still align the decimal point, that would be fine, but for students, adding the zeros is usually helpful. In this problem, the next step would be to locate the decimal point in the answer and then add normally. $0+6+0=6$; $0+5+7=12$, write the 2 and carry the $1 ; 5+4+4+1=14$, write the 4 , carry the $1 ; 3+3+1$ $=7$; and splus nothing $=2$. So the answer would be 27.426 or twenty-seven and four hundred twenty-six thousandths.
Work several of these problems on the board with students. Create a recipe checklist so the student will not forget one of the steps. Bring students up to work through the process. When students have an understanding of the process they are ready to play the game.

## Adding With Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair an Adding With Decimals card and game board. Also give students a white board.
often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
3. Shuffle the cards and place face down between the students.
4. Player 1 draws a card, completes the problem (using the white board), and locates the correct answer on the game board. Player marks the answer with a token.
5. Player 2 continues in the same way.
6. Game is over when all cards have been played.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice-Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

$4^{\text {th }}-5^{\text {th }}$ Grade Adding Decimals Cards (Please cut apart)

| $0.264+0.875=$ | $36.88+52.09=$ | $1.64+3.54=$ | $1.37+6.39=$ |
| :---: | :---: | :---: | :---: |
| $0.496+0.785=$ | $52.91+72.68=$ | $748.2+9.5=$ | $2.96+6.30=$ |
| $2.95+16.3=$ | $9.48+7.6=$ | $5.6421+2.2538=$ | $2.5+3.04=$ |
| $2.09+3.08+8=$ | $3.859+4.96+0.426=$ | $6.38+3.9+0.426=$ | $4.95+6+1.8=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Adding Decimals Answer Card

| 1.138 | 88.97 | 5.17 | 7.76 |
| :---: | :---: | :---: | :---: |
| 1.281 | 125.59 | 757.7 | 9.26 |
| 19.25 | 17.08 | 7.8959 | 5.54 |
| 13.17 | 11.819 | 10.706 | 12.75 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grade |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below

| Opening |
| :---: |
| State the objective |
| Today we are going to have fun playing games that we learned this week. |

Content (the "Meat")
Activity
Today is a review day. Students should select from the following list of activities:
Dividing Fractions
Domino Fractions
Mixed Division
Decimal Read
Adding With Decimals

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Adding Decimals |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Deck of cards

Activities at end of lesson plan
Vocabulary Notebooks
Socks (use as erasers)

Opening
State the objective
Today we are going to practice using our math vocabulary and skills with decimals.

## Gain prior knowledge by asking students the following questions

What do you know about decimals? When do we use decimals? The word decimal refers to 10. The place value of the spaces to the right of the decimal point begins with tenths. What comes next? How many places over would you find millionths? How do we use decimals to indicate money?

## Content (the "Meat")

## Problem of the Day

Look at the problem below. Solve the problem and then create a story to match the problem.

## $\$ 85.00-\$ 42.50=$

## Fact Practice

## Multiplication War

- Divide students into pairs. Give each pair a deck of cards without face cards and jokers.
- Shuffle the deck and divide the cards evenly between the two players
- On go, the players turn over the cards at the same time
- Students multiply the 2 numbers that have been turned up
- First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer
- At the end of round, students may reshuffle the pile of cards that they have
- Play can continue until one player has all cards or time has called


## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in "teaching to learn".

| Word for Today: decimal Vocabulary <br> Description: The term decimal refers to 10. We have a number system based on ten. Ten <br> stands for 10 single units, 100 is for 10 tens, or 100 units, and so on. The decimal point <br> followed by numbers indicates that those numbers are not representing a whole, but a <br> portion of the whole. They represent tenths (10 pieces), hundredths (100 pieces), <br> thousandths (1,000 pieces), and so on. Unlike fractions, decimals can only be divided into <br> ten and multiples of tens. <br> Enter the word decimal in your Vocabulary Notebook. Share your entry with a peer. <br> Vocabulary Notebook Sample: <br> New Word <br> decimal <br> Personal Connection is five-hundred sixty-seven <br> thousandths |
| :--- |

## Activity

## Addition of Decimals

In order to add decimals you only have to remember one step beyond normal addition.
That step is to align the decimal points. This means that you will be more successful if you write the problems vertically. For example if the problem is $34.25+1.234+5.4=$, we would begin by writing the problem vertically and line up the decimals. The problem would look like this:
34.250
1.234
5.400

You will notice that in order to line up the decimals you add zeros at the end so that all of the decimals have the same number of digits after the decimal point. The total of the problem above would be 39.884 and would be read 39 and eight hundred eighty-four thousandths. The AND represents the decimal point and the thousandths is used because the last digit is in the thousandths place.
Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on getting the decimal points lined up before adding.

## Adding Decimals <br> Directions:

1. Divide students into pairs.
2. Give each pair a set of Adding Decimals cards and a game board.
3. Shuffle the cards and put them between the students.

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it with a token.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" player getting ready to play this game so he/she could get all the blocks are completed?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Addition of Decimals

| $\begin{array}{r} 14.2 \\ +12.1 \\ \hline \end{array}$ | $\begin{array}{r} 18.7 \\ +10.5 \\ \hline \end{array}$ | $\begin{array}{r} 1.47 \\ +6.54 \\ \hline \end{array}$ | $\begin{array}{r} 12.3 \\ +15.2 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} 4.15 \\ 6.20 \\ +8.63 \\ \hline \end{array}$ | $\begin{array}{r} 8.461 \\ .003 \\ +.212 \\ \hline \end{array}$ |  | $\begin{array}{r} 2.26 \\ 3.43 \\ +8.15 \\ \hline \end{array}$ |
| $\begin{array}{r} 16.6 \\ +13.8 \\ \hline \end{array}$ | $\begin{array}{r} 18.2 \\ +16.5 \\ \hline \end{array}$ | $\begin{array}{r} 15.2 \\ +13.0 \\ \hline \end{array}$ | $\begin{array}{r} 22.2 \\ +13.1 \\ \hline \end{array}$ |
| $12.95+5.06=$ | $13.8+6.9=$ | $46.02+75.67=$ | $16.3+35.7$ + |
| $8.16+15.204=$ | . $007+1.12=$ | $5.98+35.8=$ | . $491+.32=$ |
| $.491+.56=$ | $22.44+1.908=$ | $32.15+64.23=$ | $14.501+62.03=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Addition of Decimals Answers

| 26.3 | 29.2 | 8.01 | 27.5 |
| :---: | :---: | :---: | :---: |
| 18.98 | 8.676 | 83.371 | 13.84 |
| 30.4 | 34.7 | 28.2 | 35.3 |
| 18.01 | 20.7 | 121.69 | 52.0 |
| 23.364 | 1.127 | 41.78 | .811 |
| 1.051 | 24.348 | 96.38 | 76.531 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Adding Decimals 2 |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Socks (for erasers)

Decks of cards
Vocabulary Notebooks
Activity at end of lesson plan

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with decimals. |

## Gain prior knowledge by asking students the following questions

What do you know about decimals? When do we use decimals? The word decimal refers to 10. The place value of the spaces to the right of the decimal point begins with tenths. What comes next? How many places over would you find millionths? How do we use decimals to indicate money?

## Content (the "Meat")

## Problem of the Day

You want to have your birthday party at Uncle Joe's Pizza Parlor. You are going to have 12 friends at your party. The birthday guest is free. If the cost is $\$ 5.25$ per person, what is the cost of this party? How do you know?

## Fact Practice

## Fore-header

1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.
2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest
3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead
4. The referee multiplies the two numbers together and states the answer
5. Each player looks at the other person's exposed number and names his/her own number
6. Person who wins (accuracy and time), collects both cards
7. Play continues until all cards are gone.
8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee

## Math Vocabulary

Word for Today: decimal

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in "teaching to learn".
It is important to review academic math vocabulary

Description: The term decimal refers to 10 . We have a number system based on ten. Ten stands for 10 single units, 100 is for 10 tens, or 100 units, and so on. The decimal point followed by numbers indicates that those numbers are not representing a whole, but a portion of the whole. They represent tenths (10 pieces), hundredths ( 100 pieces), thousandths (1,000 pieces), and so on. Unlike fractions, decimals can only be divided into ten and multiples of tens.
Review the word decimal and share it with a peer.

Vocabulary Notebook Sample:

| New Word | My Description |
| :--- | :--- |
| decimal |  |
| related to ten |  |
| Personal Connection <br> .567 is five-hundred sixty-seven <br> thousandths | Drawing |

## Activity

## Decimals

## Addition of Decimals

In order to add decimals you only have to remember one step beyond normal addition. That step is to align the decimal points. This means that you will be more successful if you write the problems vertically. For example if the problem is $34.25+1.234+5.4=$, we would begin by writing the problem vertically and line up the decimals. The problem would look like this:
34.250
1.234
5.400

You will notice that in order to line up the decimals you add zeros at the end so that all of the decimals have the same number of digits after the decimal point. The total of the problem above would be 39.884 and would be read 39 and eight hundred eighty-four thousandths. The AND represents the decimal point and the thousandths is used because the last digit is in the thousandths place.
Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on getting the decimal points lined up before adding.

## Adding Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Adding Decimals cards and a game board.
3. Shuffle the cards and put them between the students.
4. Player 1 draws a card, completes the problem, locates the answer on the game
often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation)
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
board and marks it with a token.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.

## Closing <br> Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Addition of Decimals

| $\begin{array}{r} 14.2 \\ +12.1 \\ \hline \end{array}$ | $\begin{array}{r} 18.7 \\ +10.5 \\ \hline \end{array}$ | $\begin{array}{r} 1.47 \\ +6.54 \\ \hline \end{array}$ | $\begin{array}{r} 12.3 \\ +15.2 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} 4.15 \\ 6.20 \\ +8.63 \\ \hline \end{array}$ | $\begin{array}{r} 8.461 \\ .003 \\ +.212 \\ \hline \end{array}$ |  | $\begin{array}{r} 2.26 \\ 3.43 \\ +8.15 \\ \hline \end{array}$ |
| $\begin{array}{r} 16.6 \\ +13.8 \\ \hline \end{array}$ | $\begin{array}{r} 18.2 \\ +16.5 \\ \hline \end{array}$ | $\begin{array}{r} 15.2 \\ +13.0 \\ \hline \end{array}$ | $\begin{array}{r} 22.2 \\ +13.1 \\ \hline \end{array}$ |
| $12.95+5.06=$ | $13.8+6.9=$ | $46.02+75.67=$ | $16.3+35.7$ + |
| $8.16+15.204=$ | . $007+1.12=$ | $5.98+35.8=$ | . $491+.32=$ |
| $.491+.56=$ | $22.44+1.908=$ | $32.15+64.23=$ | $14.501+62.03=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Addition of Decimals Answers

| 26.3 | 29.2 | 8.01 | 27.5 |
| :---: | :---: | :---: | :---: |
| 18.98 | 8.676 | 83.371 | 13.84 |
| 30.4 | 34.7 | 28.2 | 35.3 |
| 18.01 | 20.7 | 121.69 | 52.0 |
| 23.364 | 1.127 | 41.78 | .811 |
| 1.051 | 24.348 | 96.38 | 76.531 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Subtracting Decimals |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Dice

Vocabulary Notebooks
Socks (for erasers)
Activity at the end of the lesson plan

| Opening |
| :---: |
| State the objective |

Today we are going to practice using our math vocabulary and skills working with fractions.

Gain prior knowledge by asking students the following questions
What do you know about decimals? When do we use decimals? The word decimal refers to 10. The place value of the spaces to the right of the decimal point begins with tenths. What comes next? How many places over would you find tenthousandths? How do we use decimals to indicate money?

## Content (the "Meat")

## Problem of the Day

The Doggie Beauty Parlor bathes and grooms dogs every day. The chart below shows how many dogs were bathed each day. On average, how many dogs were bathed each day?

| Day | \# |
| :--- | :--- |
| Monday | 9 |
| Tuesday | 15 |
| Wednesday | 14 |
| Thursday | 8 |
| Friday | 12 |

## Fact Practice

## Spokes on a Wheel

1. Divide students into pairs
2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire)
3. Have students choose to put a 6,7 or 8 in the center circle
4. Student rolls two dice and adds the pips (dots)
5. Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8 . The spoke equation would look like $7 \times 8=56$

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.
6. Process continues until all spokes have an equation

## Math Vocabulary

## Word for Today: align decimals

Description: The term "align decimals" refers to the process of lining up decimals if you are going to add or subtract. This means that the decimals must be right under one another in a vertical set-up of the problem. Aligned decimals look this way:
12.320
$-.546$
To align the decimals you can add zeros to the right of the last digit. Students should enter the term in Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word <br> align decimals | My Description <br> vertical alignment of the decimal point |
| :--- | :--- |
| Personal Connection <br> I will write the numbers .54 and .34 with <br> the decimals aligned so I can add. | Drawing |

## Activity <br> Decimals

## Subtraction of Decimals

In order to subtract decimals you only have to remember one step beyond normal subtraction. That step is to align the decimal points. This means that you will be more successful if you write the problems vertically. For example if the problem is $34.25-1.234$ =, we would begin by writing the problem vertically and lining up the decimals. The problem would look like this:
34.250
-1.234
You will notice that in order to line up the decimals you add zeros at the end so that all of the decimals have the same number of digits after the decimal point. The difference of the problem above would be 33.016 and would be read 33 and sixteen thousandths. The AND represents the decimal point and the thousandths is used because the last digit is in the thousandths place.
Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on getting the decimal points lined up before subtracting.

## Subtracting Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Subtracting Decimals cards and a game board.
3. Shuffle the cards and put them between the students.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it with a token.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Subtraction of Decimals

| $\begin{array}{r} 5.6 \\ -3.2 \\ \hline \end{array}$ | $\begin{array}{r} 10.4 \\ -8.2 \\ \hline \end{array}$ | $\begin{array}{r} 8.5 \\ -3.5 \\ \hline \end{array}$ | $\begin{array}{r} 7.8 \\ -4.5 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} 9.3 \\ -7.5 \\ \hline \end{array}$ | $\begin{array}{r} 86.5 \\ -2.3 \\ \hline \end{array}$ | $\begin{array}{r} 6.3 \\ -4.1 \\ \hline \end{array}$ | $\begin{array}{r} 8.7 \\ -5.2 \\ \hline \end{array}$ |
| $\begin{array}{r} 326.7 \\ -42.8 \\ \hline \end{array}$ | $\begin{array}{r} 14.021 \\ -5.600 \\ \hline \end{array}$ | $\begin{aligned} & 1.589 \\ & -.756 \\ & \hline \end{aligned}$ | $\begin{array}{r} 16.882 \\ -9.300 \\ \hline \end{array}$ |
| 16.4-8.2 = | $75.4-3.1=$ | $7.6-3.2=$ | $26.7-2.5=$ |
| 19.5-. $001=$ | . $501-.332=$ | $42.642-10.35=$ | 28.4-4.62 |
| $33.45-15.4=$ | $18.5-9.5=$ | $14.9-3.2=$ | $1.978-1.682=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Subtraction of Decimals


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Subtracting Decimals |
| Focus: | Decimals |


| Materials: |  |  |
| :--- | :--- | :--- |
| White boards | Vocabulary Notebooks | Dominoes |
| Crayolas | Dice |  |
| Activity at the end of the lesson plan | Socks (use for erasers) |  |


| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with fractions. |
| Gain prior knowledge by asking students the following questions |
| What do you know about decimals? When do we use decimals? The word decimal refers to 10. The place value of the |
| spaces to the right of the decimal point begins with tenths. What comes next? How many places over would you find ten- |
| thousandths? How do we use decimals to indicate money? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> If apples are for sale at 6 for $\$ 1.08$. If Lily wants 15 apples, how much will had pay at this price? How did you get your answer? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in |
| Fact Practice <br> Multiplication Ladder <br> 1. Give each student a white board (include marker or crayola) <br> 2. Student should draw a ladder like the one below <br> 3. Have student roll 2 dice, total the pips and then multiply that number times each of the numbers in the ladder, writing the total to the right of the number | with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| Math Vocabulary |
| :--- |
| Word for Today: align decimals |
| Description: The term "align decimals" refers to the process of lining up decimals if you |
| are going to add or subtract. This means that the decimals must be right under one another |
| in a vertical set-up of the problem. Aligned decimals look this way: |

### 12.320

-. 546
To align the decimals you can add zeros to the right of the last digit. Students should enter the term in Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word | My Description |
| :--- | :--- |
| vertical alignment of the decimal point |  |

Activity
Decimals

## Subtraction of Decimals

In order to subtract decimals you only have to remember one step beyond normal subtraction. That step is to align the decimal points. This means that you will be more successful if you write the problems vertically. For example if the problem is 34.25-1.234 =, we would begin by writing the problem vertically and lining up the decimals. The problem would look like this:

### 34.250

-1.234
You will notice that in order to line up the decimals you add zeros at the end so that all of the decimals have the same number of digits after the decimal point. The difference of the problem above would be 33.016 and would be read 33 and sixteen thousandths. The AND represents the decimal point and the thousandths is used because the last digit is in the thousandths place.
Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on getting the decimal points lined up before subtracting.

## Subtracting Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Subtracting Decimals cards and a game board.
3. Shuffle the cards and put them between the students.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it with a token.

It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.

| Closing |
| :---: |
| Review <br> Say: <br> - Please recap what we did today. <br> - Did we achieve our objectives? |
| Debrief <br> Three Whats <br> Ask the following three what questions: <br> What was your key learning for the day? <br> What opportunities might you have to do this same thing in the "real world"? <br> What advice would you give to a "new" student getting ready to do this activity? |

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Subtraction of Decimals

| $\begin{array}{r} 5.6 \\ -3.2 \\ \hline \end{array}$ | $\begin{array}{r} 10.4 \\ -8.2 \\ \hline \end{array}$ | $\begin{array}{r} 8.5 \\ -3.5 \\ \hline \end{array}$ | $\begin{array}{r} 7.8 \\ -4.5 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} 9.3 \\ -7.5 \\ \hline \end{array}$ | $\begin{array}{r} 86.5 \\ -2.3 \\ \hline \end{array}$ | $\begin{array}{r} 6.3 \\ -4.1 \\ \hline \end{array}$ | $\begin{array}{r} 8.7 \\ -5.2 \\ \hline \end{array}$ |
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| 16.4-8.2 = | $75.4-3.1=$ | $7.6-3.2=$ | $26.7-2.5=$ |
| 19.5-. $001=$ | . $501-.332=$ | $42.642-10.35=$ | 28.4-4.62 |
| $33.45-15.4=$ | $18.5-9.5=$ | $14.9-3.2=$ | $1.978-1.682=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Subtraction of Decimals


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Multiplying Decimals |
| Focus: | Fractions |

## Materials:

White boards
Crayolas
Activities at the end of this lesson plan

## Cards

Vocabulary Notebooks

Activities at the end of this lesson plan Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with decimals. |
| Gain prior knowledge by asking students the following questions |
| What do you know about multiplying decimals? What are the steps you would take to complete this task? After you have |
| finished multiplying, what is the final step you will take to correctly place the decimal point? What is the strategy you will |
| use? |

## Content (the "Meat")

## Problem of the Day

Ben needs to buy balloons for the dance. He can get them at the Party Store and pay $\$ 4.00$ for 10 balloons. At the Balloons Galore Store he can buy 3 for a $\$ 1.50$. At which store can he get the best deal? How do you know?

## Fact Practice

## Target

1. Divide students into trios
2. Each trio needs a deck of cards without face cards and jokers
3. Place the cards face up in a TicTac Toe Grid
4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1 )
5. Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide
6. Each card may be used only one time in the equation
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck
9. Player with the most cards at the end of the game win

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

| Math Vocabulary <br> Word for Today: to the right of decimal point |
| :--- |
| Description: The digits to the right of the decimal point represent tenths, hundredths, |
| thousandths, ten-thousandths, hundred-thousandths, millionths and so on. In a multiplication |
| problem, count the digits to the right of the decimal point in both factors and then in the |
| product, begin on the right and count that many places to the left and then place the decimal |
| point. Understanding the steps of multiplying decimals is important. |
| Students should review their Vocabulary Notebook and have an accurate and informative |
| entry for the term "mixed number". |
| Vocabulary Notebook Sample: |
| New Word <br> right of decimal point |
| Mersonal Connection |
| He will give her $\$ .75$. |

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word.

When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

Once you have multiplied by each of the digits and found the total, you then count the number of digits to the right. In the first factor: 3.24 there are two digits to the right. In the second factor there are 3 numbers to the right. This is a total of 4 numbers. Beginning with the 0 on the right, count five spaces to the left and drop in the decimal point.
Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on the process of multiplication and then determining where the decimal point belongs when the product has been determined.

## Multiplying Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Multiplying Decimals cards and a game board.
3. Shuffle the cards and put them between the students.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it with a token.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Consult 4 Kids Lesson Plans

$4^{\text {th }}-5^{\text {th }}$ Grade Multiplication of Decimals

| $\begin{array}{r} 5.2 \\ \times 1.8 \\ \hline \end{array}$ | $\begin{array}{r} 10.5 \\ \times 6.6 \\ \hline \end{array}$ | $\begin{array}{r} 2.8 \\ \times 9.9 \\ \hline \end{array}$ | $\begin{array}{r} 2.2 \\ \times 4.4 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} .12 \\ \times 3.7 \\ \hline \end{array}$ | $\begin{array}{r} 5.2 \\ \times .21 \\ \hline \end{array}$ | $\begin{array}{r} 1.3 \\ \times 1 \\ \hline \end{array}$ | $\begin{array}{r} 7.1 \\ \times .25 \\ \hline \end{array}$ |
| $\begin{array}{r} 7.54 \\ \times 2.77 \\ \hline \end{array}$ | $\begin{array}{r} 6.4 \\ \times 2.5 \\ \hline \end{array}$ | $\begin{array}{r} 16.2 \\ \times 1.1 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ \times 2.1 \\ \hline \end{array}$ |
| $5.4 \times 1.3=$ | $6.6 \times 1.5=$ | $4.44 \times .01=$ | . $34 \times .12=$ |
| $45.5 \times 4.6=$ | $6.1 \times 2.5=$ | $5.6 \times 7.4=$ | $33.1 \times .8=$ |
| $3.7 \times 9.4=$ | $62.5 \times .74=$ | . $089 \times 4.03=$ | $3.5 \times 87=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Multiplication of Decimals Answer Key

| 9.36 | 69.3 | 27.72 | 9.68 |
| ---: | ---: | ---: | ---: |
| .444 | 1.092 | 1.3 | 1.775 |
| 20.8858 | 16 | 17.82 | 4.2 |
| 7.02 | 9.9 | .0444 | .0408 |
| 209.3 | 15.25 | 40.88 | 26.48 |
| 34.78 | 46.250 | .35867 | 304.5 |
|  |  |  |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Multiplying Decimals 2 |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Product Hunt Work Sheet

Vocabulary Notebooks two, 12-sided dice for each pair Sock (for erasers)

| Opening |
| :---: |
| State the objective |
| Today we are going to practice using our math vocabulary and skills with decimals. |

## Gain prior knowledge by asking students the following questions

What do you know about multiplying decimals? What are the steps you would take to complete this task? After you have finished multiplying, what is the final step you will take to correctly place the decimal point? What is the strategy you will use?

## Content (the "Meat")

## Problem of the Day

If you cut a pan of brownies into 12 pieces and 8 of the pieces were eaten, what fraction of the brownies was not eaten? How do you know?

## Fact Practice

## Product Hunt

1. Divide students into pairs
2. Each pair needs a Product Hunt sheet (attached to this lesson plans )
3. Player rolls two, 12-sided dice.
4. Player multiplies the two numbers.
5. If the product is not yet covered, then player may cover the product.
6. Next player repeats steps 1-3.
7. Winner is determined by who has the most numbers covered.

| Math Vocabulary |  |  |  |
| :--- | :--- | :---: | :---: |
| Word for Today: to the right of decimal point |  |  |  |
| Description: The digits to the right of the decimal point represent tenths, hundredths, |  |  |  |
| thousandths, ten-thousandths, hundred-thousandths, millionths and so on. In a multiplication |  |  |  |
| problem, count the digits to the right of the decimal point in both factors and then in the |  |  |  |
| product, begin on the right and count that many places to the left and then place the decimal |  |  |  |
| point. Understanding the steps of multiplying decimals is important. |  |  |  |
| Students should review their Vocabulary Notebook and have an accurate and informative |  |  |  |
| entry for the erm "right of decimal point". |  |  |  |
| Vocabulary Notebook Sample: |  |  |  | | New Word | My Description |
| :--- | :--- |
| right of decimal point | digits to the right of the decimal are less than a |
| whole |  |

It is important to review academic math vocabulary often throughout the day Complete the Vocabulary notebook for each word.
When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

Once you have multiplied by each of the digits and found the total, you then count the number of digits to the right. In the first factor: 3.24 there are two digits to the right. In the second factor there are 3 numbers to the right. This is a total of 4 numbers. Beginning with the 0 on the right, count five spaces to the left and drop in the decimal point.
Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on the process of multiplication and then determining where the decimal point belongs when the product has been determined.

## Multiplying Decimals

## Directions:

3.24
X. 245

1620
12960
64800
. 79380
. 245
. 7938

## Multiplication of Decimals

Multiplying decimals is exactly like multiplying in other numbers. You write the problems vertically and multiply beginning with the bottom right factor and continuing. You do not need to align the decimal points. When you have a product, you return to the two factors and count the number of digits to the right of the decimal in both factors. When you have that number, you begin counting right to left in the product and when you have counted the correct number of spaces, you place the decimal point in the product. For example, in the problem:

1. Divide students into pairs.
2. Give each pair a set of Multiplying Decimals cards and a game board.
3. Shuffle the cards and put them between the students.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it with a token.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Product Hunt

| 48 | 20 | 81 | 3 | 45 | 27 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24 | 108 | 77 | 7 | 40 |
| 120 | 72 | 96 | 8 | 18 | 60 |
| 14 | 144 | 70 | 22 | 15 | 11 |
| 33 | 35 | 66 | 132 | 63 | 16 |
| 12 | 30 | 28 | 110 | 100 | 49 |
| 6 | 36 | 21 | 121 | 90 | 2 |
| 84 | 5 | 44 | 25 | 99 | 10 |
| 32 | 9 | 56 | 88 | 4 | 11 |
| 24 | 50 | 55 | 54 | 42 | 80 |

$4^{\text {th }}-5^{\text {th }}$ Grade Multiplication of Decimals

| $\begin{array}{r} 5.2 \\ \times 1.8 \\ \hline \end{array}$ | $\begin{array}{r} 10.5 \\ \times 6.6 \\ \hline \end{array}$ | $\begin{array}{r} 2.8 \\ \times 9.9 \\ \hline \end{array}$ | $\begin{array}{r} 2.2 \\ \times 4.4 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\begin{array}{r} .12 \\ \times 3.7 \\ \hline \end{array}$ | $\begin{array}{r} 5.2 \\ \times .21 \\ \hline \end{array}$ | $\begin{array}{r} 1.3 \\ \times 1 \\ \hline \end{array}$ | $\begin{array}{r} 7.1 \\ \times .25 \\ \hline \end{array}$ |
| $\begin{array}{r} 7.54 \\ \times 2.77 \\ \hline \end{array}$ | $\begin{array}{r} 6.4 \\ \times 2.5 \\ \hline \end{array}$ | $\begin{array}{r} 16.2 \\ \times 1.1 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ \times 2.1 \\ \hline \end{array}$ |
| $5.4 \times 1.3=$ | $6.6 \times 1.5=$ | $4.44 \times .01=$ | . $34 \times .12=$ |
| $45.5 \times 4.6=$ | $6.1 \times 2.5=$ | $5.6 \times 7.4=$ | $33.1 \times .8=$ |
| $3.7 \times 9.4=$ | $62.5 \times .74=$ | . $089 \times 4.03=$ | $3.5 \times 87=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Multiplication of Decimals Answer Key

| 9.36 | 69.3 | 27.72 | 9.68 |
| ---: | ---: | ---: | ---: |
| .444 | 1.092 | 1.3 | 1.775 |
| 20.8858 | 16 | 17.82 | 4.2 |
| 7.02 | 9.9 | .0444 | .0408 |
| 209.3 | 15.25 | 40.88 | 26.48 |
| 34.78 | 46.250 | .35867 | 304.5 |
|  |  |  |  |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Division of Decimals |
| Focus: | Decimals |

## Materials:

White boards Vocabulary Notebooks

Crayolas
Decks of cards
Activity at the end of the lesson plan
Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with decimals. |
| Gain prior knowledge by asking students the following questions |
| What do you know about decimals? What does a decimal indicate about the numbers to the right of it? What about those <br> to the left? When do you commonly use decimals? If you are reading a number with a decimal point aloud, what do you <br> say when you get to the decimal point? |

## Content (the "Meat")

Problem of the Day
Look at the word below. Write a fraction that shows the number of vowels in the word. Write a fraction that shows the number of consonants. How do you know that the answer is correct?

## superficial

## Fact Practice <br> Draw!

1. Divide students into pairs and give each pair a deck of cards
2. Remove the face cards and jokers from the deck of cards.
3. Shuffle the deck.
4. Decide who will go first.
5. First player draws two cards.
6. Student multiplies the cards.
7. Student writes his/her problem on the white board, writing a complete number sentence.
8. Students take turns drawing and creating problems.

## Math Vocabulary

## Word of the day: decimal in the divisor

When you are dividing with decimals you must be sure that there is NO decimal in the divisor.
$* A c t i v i t y ~$
Moment(s) Throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. It is important to review academic math vocabulary often throughout the day.

In the problem $40 \div 5$, the 5 is the divisor. If there is a decimal in the divisor, you must move it to the right by however many places you have to the right. For example, if the divisor is .25, you would need to move the decimal two points to the right so it becomes 25 . When you move a decimal point in the divisor, you MUST move the same number of places to the right in the dividend. If the dividend is 4.25 , then it would become 425 . If the dividend was 42 without any decimal you would add two zeros so you could then move the decimal two places to the right. This is permissible.
Students should enter the term in Vocabulary Notebook.
Vocabulary Notebook Sample:
\(\left.\begin{array}{|l|l|}\hline New Word \& My Description <br>
decimal in the divisor <br>
move the decimal out of the divisor, <br>

matching the move in the dividend\end{array}\right]\)|  | Drawing |
| :--- | :--- |
| I will move the decimal two places in both <br> the divisor and the dividend. | 42. becomes 4200. In the dividend |

## Activity

## Division of Decimals

Dividing decimals requires that you write the problems in traditional form:

$$
5 \longdiv { 4 0 . 5 }
$$

Since there is no decimal point in the divisor, you simply divide normally (you would find that the quotient is 81 ). You then move the decimal straight up, in this case the answer becomes 8.1. If there was a decimal point in the divisor, it would be important for you to remove it by moving it to the right, and then doing the exact same number of moves inside of the dividend.

$$
. 5 \longdiv { 4 0 . 5 }
$$

becomes

$$
5 \longdiv { 4 0 5 . }
$$

and the answer would become 81. What this answer is telling you is that there are $811 / 2$ in 40.5.

Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on the process of division and then determining if they should move any decimal in the divisor. If there is a decimal in the dividend, move it straight up.

## Division With Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Division with Decimals cards and a game board.
3. Shuffle the cards and put them between the students.
4. Player 1 draws a card, completes the problem, locates the answer on the game board

Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
and marks it with a token.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
$4^{\text {th }}-5^{\text {th }}$ Grade Division of Decimals

| $5.481 \div 6=$ | $30.24 \div 36=$ | $57.96 \div 63=$ | $166.88 \div 56$ |
| :---: | :---: | :---: | :---: |
| $73.84 \div 8=$ | $579.6 \div 92=$ | $48.24 \div 72=$ | $5,577.6 \div 83=$ |
| $3.402 \div 7=$ | $15.75 \div 45=$ | $266.8 \div 58=$ | $32.496 \div 48=$ |
| $212.4 \div 6=$ | $407.4 \div 97=$ | $23.04 \div 64=$ | $64 \div .8=$ |
| $100 \div .25=$ | $7.93 \div 6.1=$ | $35 \div .5=$ | $48 \div 1.2=$ |
| $42.4 \div 5.3=$ | $64 \div .4=$ | $4.9 \div 7=$ | $15.2 \div .19=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Division of Decimals Answers


| Component: | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Division of Decimals 2 |
| Focus: | Decimals |

## Materials:

White boards
Crayolas
Activity at the end of the lesson plan
ablary Notebooks
Double 9 Dominoes
Socks (use for erasers)

## Opening

State the objective
Today we are going to practice using our math vocabulary and skills with decimals.

## Gain prior knowledge by asking students the following questions

What do you know about decimals? What does a decimal indicate about the numbers to the right of it? What about those to the left? When do you commonly use decimals? If you are reading a number with a decimal point aloud, what do you say when you get to the decimal point?

## Content (the "Meat")

## Problem of the Day

Lori will use 20 beads to make a bracelet. If 8 of the beads are gold, 3 are purple, and 5 are orange, how many of the beads are blue? Write a fraction to show each color of bead.

## Fact Practice

## Spots and Dots

There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock and if possible, laminate for use again in the future.

Players sit across from each other.
Dominoes are between them, face (or spots) down.
Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is


Multiplication: $2 \times 3=6$

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
Take advantage of any teachable moments.
Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking.
When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.
Math Vocabulary
Word of the day: decimal in the divisor
When you are dividing with decimals you must be sure that there is NO decimal in the divisor.
In the problem $40 \div 5$, the 5 is the divisor. If there is a decimal in the divisor, you must move it
to the right by however many places you have to the right. For example, if the divisor is .25,
you would need to move the decimal two points to the right so it becomes 25 . When you
move a decimal point in the divisor, you MUST move the same number of places to the right in
the dividend. If the dividend is 4.25, then it would become 425. If the dividend was 42 without
any decimal you would add two zeros so you could then move the decimal two places to the
right. This is permissible.
Students should enter the term in Vocabulary Notebook.

Vocabulary Notebook Sample: \begin{tabular}{|l|l|}

\hline | New Word |
| :--- | <br>


| My Description |
| :--- | <br>


| decimal in the divisor |
| :--- |
| I will move the decimal out of the divisor, |
| matching the move in the dividend |
| the divisor and the dividend. | \& | Drawing |
| ---: |
| 42. becomes 4200. In the dividend | <br>

\hline
\end{tabular}

## Activity

## Decimals

## Division of Decimals

Dividing decimals requires that you write the problems in traditional form:

$$
5 \longdiv { 4 0 . 5 }
$$

Since there is no decimal point in the divisor, you simply divide normally (you would find that the quotient is 81 ). You then move the decimal straight up, in this case the answer becomes 8.1. If there was a decimal point in the divisor, it would be important for you to remove it by moving it to the right, and then doing the exact same number of moves inside of the dividend.

$$
. 5 \longdiv { 4 0 . 5 }
$$

becomes

$$
5 \longdiv { 4 0 5 . }
$$

and the answer would become 81. What this answer is telling you is that there are $811 / 2$ in 40.5.

Do several of these problems on the board with the students, bringing them up and having them work through the problem, focusing on the process of division and then determining if they should move any decimal in the divisor. If there is a decimal in the dividend, move it straight up.

It is important to review academic math vocabulary often throughout the day.
Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Division With Decimals

## Directions:

1. Divide students into pairs.
2. Give each pair a set of Division with Decimals cards and a game board.
3. Shuffle the cards and put them between the students.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it with a token.
5. Player 2 continues in the same way.
6. Play is over when all answers are covered.

## Closing

Review
Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Debrief

## Three Whats

Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?

## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

## Double 9 Dominoes



|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |


|  | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ | $\bullet$ |  |
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$4^{\text {th }}-5^{\text {th }}$ Grade Division of Decimals

| $5.481 \div 6=$ | $30.24 \div 36=$ | $57.96 \div 63=$ | $166.88 \div 56$ |
| :---: | :---: | :---: | :---: |
| $73.84 \div 8=$ | $579.6 \div 92=$ | $48.24 \div 72=$ | $5,577.6 \div 83=$ |
| $3.402 \div 7=$ | $15.75 \div 45=$ | $266.8 \div 58=$ | $32.496 \div 48=$ |
| $212.4 \div 6=$ | $407.4 \div 97=$ | $23.04 \div 64=$ | $64 \div .8=$ |
| $100 \div .25=$ | $7.93 \div 6.1=$ | $35 \div .5=$ | $48 \div 1.2=$ |
| $42.4 \div 5.3=$ | $64 \div .4=$ | $4.9 \div 7=$ | $15.2 \div .19=$ |

$4^{\text {th }}-5^{\text {th }}$ Grade Division of Decimals Answers


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Fractions, Decimals, and Percentages |
| Focus: | Number |

## Materials:

White boards
Crayolas
Decks of cards

Vocabulary Notebooks
6 -sided dice; 12 -sided dice
Socks (use as erasers)

Activity at end of the lesson plan

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with decimals. |
| Gain prior knowledge by asking students the following questions |
| It is important that students can learn to translate fractions, decimals, and percentages into one another. These types of |
| entities have a relationship. How would you change a fraction into a decimal? How would you change a decimal into a |
| fraction? How would you change a decimal into a percentage? How would you change a percentage into a decimal? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> Write 3 more fractions that are an equivalent for $3 / 4$. Tell how you know your answer is correct. | *Activity $\rightarrow$ Teachable Moment(s) throughout |
| Fact Practice <br> Fact Family <br> A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members: $\begin{aligned} & 9 \times 4=36 \\ & 4 \times 9=36 \\ & 36 \div 4=9 \\ & 36 \div 9=4 \end{aligned}$ <br> Students should roll 2 dice and create a Fact Family by writing the members of the family on the white board. Student should roll a total of 5 times, creating 5 Fact Families | During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: equivalent decimals, fractions, percentages <br> Description: Decimals, fractions, and percentages can be equivalent. $1 / 4, .25$, and $25 \%$ are | It is important to review academic math vocabulary often throughout the day. |

all equivalent. This makes $1 / 8, .125$, and $12.5 \%$ equivalent as well. To find the decimal equivalent of a fraction divide the numerator by the denominator. To change a decimal into a percentage remember that the $\%$ sign relates everything to $100 \%$. To change the decimal, you move 2 spaces to the right and add the percent sign. There are so basic equivalencies that you should memorize. They are commonly used interchangeably.
In the vocabulary notebook, students should crate the normal entry and also the common equivalencies should be listed:
$1 / 4, .25,25 \%$
1/2.5, 50\%
$3 / 4, .75,75 \%$
1/8.125, 12.5\%
3/8, .375, 37.5\%
5/8, .625, 62.5\%
7/8, . $875,87.5 \%$
1/3, .33, 33.3\%
2/3, .67, 66.7\%
1/5.2, 20\%
2/5,. 4 40\%
3/5.6, 60\%
4/5.8, 80\%
Vocabulary Notebook Sample:

| New Word | My Description <br> $1 / 2.550 \%$ |
| :--- | :--- |
| equaling the same fractional part |  |

## Activity

Decimals

## Decimals, Fractions, and Percentages

Decimals, fractions and percentages can all represent the same amount. For example, $1 / 4, .25$ and $25 \%$ are of equal value, just like $1 / 2, .5$ and $50 \%$. While all of these equivalents can be easily calculated (to translate a fraction into a decimal divide the numerator by the denominator, to translate the decimal into a percent, move the decimal two places to the right and follow by a $\%$ sign).
Today, students are going to play Tic Tac Toe by using equivalents to score or block the opponents play. On the Tic Tac Toe board, player can only play the equivalent that labels the column:

| Fraction | Decimal | Percent |
| :--- | :--- | :--- |

Be sure to duplicate the Equivalents cards on two different colors of paper to determine which player has laid down which card.
Play several games on the chalk board with students, until they are comfortable playing the game.

Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Tic Tac Equivalents

## Directions:

1. Divide students into pairs.
2. Give each pair a Tic Tac Equivalent board and two sets of Equivalent cards (duplicated on different colors of paper)
3. Players each take one color of Equivalent Cards.
4. Players each arrange their cards to be in equivalent trios.
5. Play begins like Tic Tac Toe, following the description above.
6. Player who gets three color cards in a row (vertically, horizontally, or diagonally) wins.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Consult 4 Kids Lesson Plans

## $4^{\text {th }}-5^{\text {th }}$ Grade Tic Tac Equivalent

| Fraction | Decimal | Percent |
| :--- | :--- | :--- |
|  |  |  |
|  |  |  |
|  |  |  |




Consult 4 Kids Lesson Plans


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Fractions, Decimals, Percentages 2 |
| Focus: | Number |

## Materials:

White boards Vocabulary Notebooks

Crayolas Decks of cards
Activity at the end of the lesson plan Socks (use as erasers)

| Opening |
| :--- |
| State the objective |
| Today we are going to practice using our math vocabulary and skills in working with decimals. |
| Gain prior knowledge by asking students the following questions |
| It is important that students can learn to translate fractions, decimals, and percentages into one another. These types of <br> entities have a relationship. How would you change a fraction into a decimal? How would you change a decimal into a <br> fraction? How would you change a decimal into a percentage? How would you change a percentage into a decimal? |


| Content (the "Meat") |  |
| :---: | :---: |
| Problem of the Day <br> John bought a dozen donuts for $\$ 5.40$. He sold the donuts at school for a total of $\$ 7.80$. How much money did he make on each donut? How do you know? | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice Multiples <br> Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas ( 150 chart). <br> 1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice) <br> 2. Mark all multiples of the number and then pass off to the next person. <br> 3. Player may mark the same number. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |
| Math Vocabulary <br> Word for Today: equivalent decimals, fractions, percentages <br> Description: Decimals, fractions, and percentages can be equivalent. $1 / 4, .25$, and $25 \%$ are | It is important to review academic math vocabulary often throughout the day. |

all equivalent. This makes $1 / 8, .125$, and $12.5 \%$ equivalent as well. To find the decimal equivalent of a fraction divide the numerator by the denominator. To change a decimal into a percentage remember that the $\%$ sign relates everything to $100 \%$. To change the decimal, you move 2 spaces to the right and add the percent sign. There are so basic equivalencies that you should memorize. They are commonly used interchangeably.
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1/8.125, 12.5\%
3/8, .375, 37.5\%
5/8, .625, 62.5\%
7/8, . $875,87.5 \%$
1/3, .33, 33.3\%
2/3, .67, 66.7\%
1/5.2, 20\%
2/5,. 4 40\%
3/5.6, 60\%
4/5.8, 80\%
Vocabulary Notebook Sample:

| New Word <br> $1 / 2.550 \%$ | My Description <br> equaling the same fractional part |
| :--- | :--- |
| Personal Connection | Drawing |
| He got $80 \%$ on his spelling test. | 2 |

Activity
Decimals

## Decimals, Fractions, and Percentages

Decimals, fractions and percentages can all represent the same amount. For example, $1 / 4, .25$ and $25 \%$ are of equal value, just like $1 / 2, .5$ and $50 \%$. While all of these equivalents can be easily calculated (to translate a fraction into a decimal divide the numerator by the denominator, to translate the decimal into a percent, move the decimal two places to the right and follow by a \% sign).
Today, students are going to play Tic Tac Toe by using equivalents to score or block the opponents play. On the Tic Tac Toe board, player can only play the equivalent that labels the column:

| Fraction | Decimal | Percent |
| :--- | :--- | :--- |

Be sure to duplicate the Equivalents cards on two different colors of paper to determine which player has laid down which card.
Play several games on the chalk board with students, until they are comfortable playing the game.

Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).
Vocabulary Notebooks can be made from $1 / 2$ of a composition book.

Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.

## Tic Tac Equivalents

## Directions:

1. Divide students into pairs.
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3. Players each take one color of Equivalent Cards.
4. Players each arrange their cards to be in equivalent trios.
5. Play begins like Tic Tac Toe, following the description above.
6. Player who gets three color cards in a row (vertically, horizontally, or diagonally) wins.


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

Fact Practice-Multiples

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |

$4^{\text {th }}-5^{\text {th }}$ Grade Tic Tac Equivalent

| Fraction | Decimal | Percent |
| :--- | :--- | :--- |
|  |  |  |
|  |  |  |
|  |  |  |





| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Student Activity Choice |
| Focus: | Review |

## Materials:

Game Boards for games below.

| Opening |
| :---: |
| State the objective |
| Today we are going to have fun playing games that we learned this week. |

## Content (the "Meat")

Activity
Today is a review lesson. Students should choose from the following activities:
Addition With Decimals
Subtraction With Decimals
Multiplication With Decimals
Division With Decimals
Tic Tac Equivalents

## Closing

## Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?


## Reflection (Confirm, Tweak, Aha!)

1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
