| 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



| $\frac{1}{3}+\frac{2}{3}=$ | $\frac{2}{9}+\frac{5}{9}=$ | $\frac{1}{6}+\frac{1}{6}=$ |
| :---: | :---: | :---: |
| $\frac{3}{6}+\frac{1}{6}=$ | $\frac{2}{4}+\frac{2}{4}=$ | $\frac{1}{2}+\frac{1}{2}=$ |
| $\frac{5}{8}+\frac{2}{8}=$ | $\frac{1}{5}+\frac{2}{5}=$ | $\frac{2}{10}+\frac{4}{10}=$ |
| $\frac{1}{4}+\frac{1}{4}=$ | $\frac{3}{5}+\frac{1}{5}=$ | $\frac{3}{7}+\frac{2}{7}=$ |
| $\frac{1}{3}+\frac{1}{3}=$ | $\frac{1}{7}+\frac{4}{6}=$ |  |
| $\frac{2}{7}+\frac{4}{7}=$ | $\frac{1}{4}=$ | $\frac{1}{5}+\frac{4}{5}=$ |
| $\frac{3}{8}+\frac{2}{8}=$ | $\frac{1}{9}+\frac{4}{9}=$ | $\frac{4}{9}+\frac{4}{9}=$ |
| $\frac{2}{9}+\frac{3}{9}=$ |  |  |


| 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 denominator are large, the fact is that you stil how much you have is easier when the frac 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 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



| $\frac{1}{3}+\frac{2}{3}=$ | $\frac{2}{9}+\frac{5}{9}=$ | $\frac{1}{6}+\frac{1}{6}=$ |
| :---: | :---: | :---: |
| $\frac{3}{6}+\frac{1}{6}=$ | $\frac{2}{4}+\frac{2}{4}=$ | $\frac{1}{2}+\frac{1}{2}=$ |
| $\frac{5}{8}+\frac{2}{8}=$ | $\frac{1}{5}+\frac{2}{5}=$ | $\frac{2}{10}+\frac{4}{10}=$ |
| $\frac{1}{4}+\frac{1}{4}=$ | $\frac{3}{5}+\frac{1}{5}=$ | $\frac{3}{7}+\frac{2}{7}=$ |
| $\frac{1}{3}+\frac{1}{3}=$ | $\frac{1}{7}+\frac{4}{6}=$ |  |
| $\frac{2}{7}+\frac{4}{7}=$ | $\frac{1}{4}=$ | $\frac{1}{5}+\frac{4}{5}=$ |
| $\frac{3}{8}+\frac{2}{8}=$ | $\frac{1}{9}+\frac{4}{9}=$ | $\frac{4}{9}+\frac{4}{9}=$ |
| $\frac{2}{9}+\frac{3}{9}=$ |  |  |


| 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



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


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




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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> $+\frac{84}{156}$ | $\frac{4}{6}$ $+\frac{1}{6}$ | $\frac{1}{12}$ $+\frac{9}{12}$ | $\frac{30}{60}$ $+\frac{18}{60}$ | $\frac{10}{35}$ $+\frac{21}{35}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \frac{1}{4} \\ +\frac{2}{4} \\ \hline \end{array}$ | 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 |  |  |  |  | $\begin{array}{r} \frac{9}{72} \\ +\frac{40}{72} \end{array}$ |
| $\begin{array}{r} \frac{8}{12} \\ +\frac{9}{12} \end{array}$ |  |  |  |  |  | $\frac{28}{56}$ $+\frac{24}{56}$ |
| $\begin{array}{r} \frac{3}{10} \\ +\frac{8}{10} \end{array}$ |  |  |  |  |  | $\begin{array}{r} \frac{25}{60} \\ +\quad \frac{6}{60} \\ \hline \end{array}$ |
| $\begin{array}{r} \frac{4}{40} \\ +\frac{20}{40} \end{array}$ |  |  |  |  |  | $\begin{array}{r} \frac{8}{24} \\ +\frac{3}{24} \end{array}$ |
| $\begin{array}{r} \frac{5}{12} \\ +\frac{3}{12} \end{array}$ |  |  |  |  |  | 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.
