

Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Fraction Review
Focus:	Fractions
FUCUS.	FIACUUIS

Materials:	
White boards	Activities at end of lesson plan
Crayolas	Vocabulary Notebooks
Deck of 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? 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	*Activity → Teachable Moment(s) <i>throughout</i>
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.	During the lesson check in with students repeatedly.
Fact Practice Multiplication War	Check in about what is happening and what they are
Divide students into pairs. Give each pair a deck of cards without face cards and jokers.	thinking. Take advantage of any teachable moments.
 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 	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 "teaching to learn".
Math Vocabulary Word for Today: numerator	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 in a sentence.Use the word numerator in a sentence.Vocabulary Notebook Sample:		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).
New Word	My Description	Vocabulary Notebooks can be made from ½ of a
numerator	A numerator is the top number of a fraction. It tells how many parts I have.	composition book.
Personal Connection	Drawing	
When I eat pizza, I start with $\frac{1}{8}$.		
Activity FractionsFractionsWe 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.		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 Review <u>Directions:</u> 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 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.		

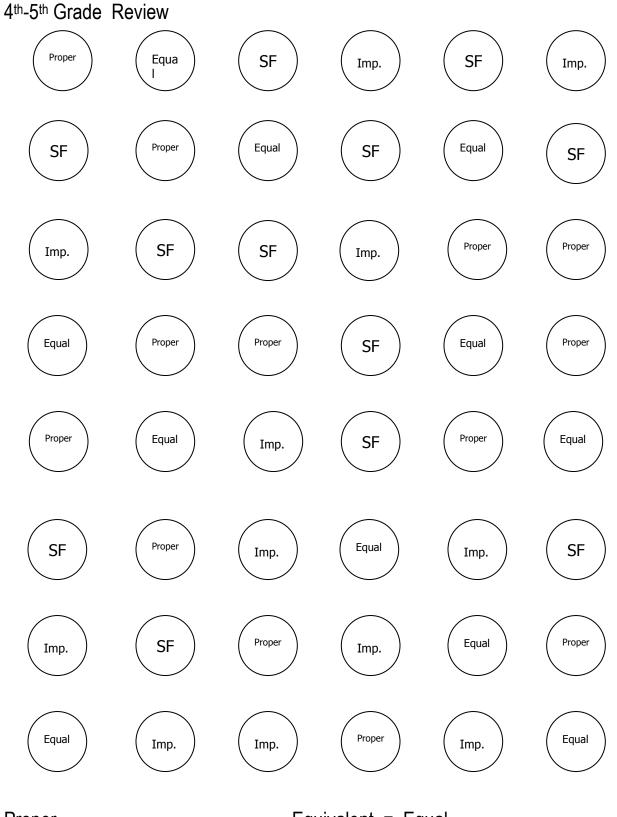


	Closing
	Review
Say:	
٠	Please recap what we did today.
٠	Did we achieve our objectives?
	Debrief
Three	e Whats
Ask the	e following three what questions:
	What was your key learning for the day?
	What opportunities might you have to do this same thing in the "real world"?
	What advice would you give 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.





Proper Imp. = Improper Equivalent = Equal Simplest Form = SF





Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Fraction Review 2
Focus:	Fractions

Materials:	
White boards	Decks of cards
Crayolas	Vocabulary Notebooks
Socks (for erasers)	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	*Activity → Teachable Moment(s) <i>throughout</i>	
Study the two problems. Are the quotients the same or different. Explain how you know. 4,900 ÷ 700 =	During the lesson check in with students repeatedly.	
490 ÷ 70 =	Check in about what is	
Fact Practice	happening and what they are thinking.	
Foreheader	Take advantage of any	
1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.	teachable moments.	
 Shuffle the deck and give all of the cards to the referee who will be "judging" the contest On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead 	Stop the class and focus on a student's key learning or understanding. Ask open-	
4. The referee multiplies the two numbers together and states the answer	ended questions to	
5. Each player looks at the other person's exposed number and names his/her own number	determine what the rest of	
6. Person who wins (accuracy and time), collects both cards	the group is thinking.	
7. Play continues until all cards are gone.	When possible, engage	
 Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee 	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: 		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)
New Word denominator Personal Connection When you have quarters, the denominator is 4 when you think about a dollar.	My Description The bottom number of a fraction; the total number of pieces Drawing	Vocabulary Notebooks can be made from ½ of a composition book.
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 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.
Reflect	ion (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

- 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.





Proper Imp. = Improper Equivalent = Equal Simplest Form = SF



Component	Math
Grade Level:	4 th & 5 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ 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	*Activity → Teachable Moment(s) <i>throughout</i>
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.	During the lesson check in with students repeatedly.
Fact Practice Spokes on a Wheel 1. Divide students into pairs	Check in about what is happening and what they are thinking.
 On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire) 	Take advantage of any teachable moments
 Have students choose to put a 6, 7 or 8 in the center circle Student rolls two dice and adds the pips (dots) 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 x 8 = 56 	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.
6. Process continues until all spokes have an equation	When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

Г



Math Vo Word for Today: simplify Description: Simplify is a term we use to ind lowest possible terms. In other words, the fraction example, if we have the fraction $\frac{12}{16}$ which can lowed or most simple terms. We can still simplify and reduce or simplify the fraction. Students complete the Vocabulary Notebook Vocabulary Notebook Sample: New Word simplify	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 ½ of a composition book.	
I had a homework assignment that had me simplify fractions.		
Actine Comparing Addition of Fractions There are three steps to adding fractions. Step 1: Make sure the bottom numbers (the d Step 2: Add the top numbers (the numerators Step 3: Simplify the fraction (if needed) Example: $\frac{1}{3} + \frac{2}{3} = \frac{3}{3}$ and then reduce to the sim Complete several examples with the students should be the same. (In several days, you will different denominators). Check It Off <u>Directions:</u> 1. Divide students into pairs.	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.	
 Divide students into pairs. Give each pair a Check It Off game board pens/crayons. Shuffle the cards and place them to the r Player 1 draws a problem card and goes correct answer for the fraction addition pr Player 1 locates the answer on the game Player 2 repeats the process. Game is over when all of the cards have 		



	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.
Reflecti	on (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 Check It Off

7 9	$\frac{3}{5}$	1	5 7	<u>5</u> 9	1	$\frac{7}{8}$	
$\frac{1}{3}$							
$\frac{3}{5}$		There are thre Step 1 : Make		g fractions.		$\frac{3}{4}$	
$\frac{5}{6}$		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.					
1							
5 9						$\frac{8}{9}$	
$\frac{2}{3}$	$\frac{1}{2}$	<u>5</u> 9	$\frac{2}{3}$	1	$\frac{2}{7}$	$\frac{4}{5}$	



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



Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Check It Off 2
Focus:	Fractions

Materials:

White boardsVocabulary NotebooksCrayolasDiceActivity at the end of the lesson planSo

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? 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	*Activity → Teachable Moment(s) <i>throughout</i>
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.	During the lesson check in with students repeatedly.
Fact Practice	Check in about what is happening and what they are thinking.
 Multiplication Ladder 1. Give each student a white board (include marker or crayola) 2. Student should draw a ladder like the one below. 	Take advantage of any teachable moments.
2. Student should draw a ladder like the one below 9 8 7 6	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.
4 3 1	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	



Complete" center.

Consult 4 Kids Lesson Plans numbers in the ladder, writing the total to the right of the number Math Vocabulary It is important to review academic math vocabulary Word for today: reduce often throughout the day. Description: Reduce is the term we use to discuss how to make fractions more Complete the Vocabulary manageable. If you have a fraction that is $\frac{150}{300}$, even though the numerator and the notebook for each word. denominator are large, the fact is that you still have 1/2 of the whole thing. Understanding When possible, have how much you have is easier when the fraction has been reduced to its lowest form. To students experience the word reduce a fraction you do the same to both the numerator and the denominator which allows (Ex. 4 students creating a the relationship to stay in proportion. right angle, multiple students Create a Notebook entry for the word: reduce acting out an equation). Vocabulary Notebook Sample: Vocabulary Notebooks can My Description New Word be made from 1/2 of a composition book. a fraction like $\frac{75}{100}$ is easier to understand reduce when reduced to $\frac{3}{4}$. Personal Connection Drawing If I eat 4 of the eight pieces of pizza, then I have eaten 1/2 of it. Activity Focus on having young Addition of Fractions people "compete" in pairs or There are three steps to adding fractions. small groups. Once a game Step 1: Make sure the bottom numbers (the denominators) are the same is mastered you can utilize it Step 2: Add the top numbers (the numerators). Put the answer over the same denominator. in the "When Homework Is

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.



	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	ne day?	
What opportunities might you hav	ve 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.



4th – 5th Grade Check It Off

7 9	$\frac{3}{5}$	1	5 7	5 9	1	$\frac{7}{8}$	
$\frac{1}{3}$							
$\frac{3}{5}$		There are thre Step 1 : Make		g fractions.		$\frac{3}{4}$	
$\frac{5}{6}$		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.					
1							
5 9						$\frac{8}{9}$	
$\frac{2}{3}$	$\frac{1}{2}$	<u>5</u> 9	$\frac{2}{3}$	1	$\frac{2}{7}$	$\frac{4}{5}$	



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



Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	What's the Difference?
Focus:	Fractions

Materials:			
White boards	Vocabulary N	lotebooks	
Crayolas	Cards		
Activities at the end of this les	son 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 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	*Activity → Teachable Moment(s) <i>throughout</i>					
Which of the following numbers are prime? Which are composite numbers? Explain how you know.	During the lesson check in with students repeatedly.					
13 35 26 51 71	Check in about what is					
Fact Practice	happening and what they are thinking.					
 Divide students into trios Each trio needs a deck of cards without face cards and jokers Place the cards face up in a TicTac Toe Grid Turn up a 10th card which will be to the side and becomes the target number (aces count as 1) 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 Each card may be used only one time in the equation 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 x 2 = 10, and pick up the 5 and the 2. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck Player with the most cards at the end of the game win 	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.					



Math Vo Word for Today: prime Description: Prime is a mathematical term we divided evenly by itself and 1. For example, 5 are 1 and 5. 6 on the other hand is a composi 6, and 2 and 3. Both combinations in multiplic some other numbers that are prime that are high help you to reduce fractions. Students should complete the Vocabulary Note Vocabulary Notebook Sample: New Word prime	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 ½ of a composition book.	
Personal Connection	Drawing	
Next year my age will be a prime number.		
Ac	tivity	Focus on having young
Frac Subtraction of Fractions There are three steps to subtracting fractions.	people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.	
Step 1 : Make sure the bottom numbers (the de Step 2 : Subtract the top numbers (the numera denominator.	,	
Step 3 : Simplify the fraction (if needed)	wheat to man 1	
Example: $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$ and then reduce to the sim Complete several examples with the students. should be the same. (In several days, you will different denominators).		
and pens/crayons3. Shuffle the cards and place them to the ri	through the What's the Difference steps to find n problem	



7. Game is over when all of the cards have been solved	7.	Game is over when all of the cards have been solved
--	----	---

Closing

Review

Debrief

Say:

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

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.



4th – 5th Grade What's the Difference?

5 9	$\frac{3}{5}$	$\frac{1}{3}$	$\frac{6}{7}$	$\frac{8}{9}$	$\frac{1}{3}$	$\frac{3}{8}$
$\frac{1}{3}$		$\frac{2}{7}$				
$\frac{1}{5}$		$\frac{1}{4}$				
$\frac{1}{2}$		 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. 				
$\frac{2}{5}$	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.					$\frac{1}{7}$
$\frac{1}{2}$		$\frac{1}{4}$				
$\frac{2}{3}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{2}{3}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{9}$



 $4^{th} - 5^{th}$ Grade What's the Difference?

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



Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	What's the Difference 2
Focus:	Fractions

Materials:			
White boards	Vocabulary Notebooks	Activity at the end of the lesson plan	
Crayolas	two, 12-sided dice for each pair		
Product Hunt Work Sheet	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	*Activity → Teachable Moment(s) <i>throughout</i>				
	ght \$25.83 worth of pears from a local orchard. If she bought nine pounds of pears, did the pears cost per pound? Tell how you know.	During the lesson check in with students repeatedly.				
	Fact Practice	Check in about what is happening and what they are thinking.				
Product Hu 1.	unt Divide students into pairs	Take advantage of any teachable moments.				
 Each Playe Playe Playe If the 	ach pair needs a Product Hunt sheet (attached to this lesson plans) layer rolls two, 12-sided dice. layer multiplies the two numbers. the product is not yet covered, then player may cover the product. ext player repeats steps 1-3.	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.				
7.	Winner is determined by who has the most numbers covered.	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

often throughout the day

Complete the Vocabulary

notebook for each word.

students experience the word

When possible, have

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.

Create an entry of the term composite in the vo Vocabulary Notebook Sample:	(Ex. 4 students creating a	
New Word	My Description	right angle, multiple students acting out an equation).
composite	4, 6, 8, 9, 10, and 12 are composite numbers.	Vocabulary Notebooks can be made from ½ of a composition book.
Personal Connection	Drawing	
My age this year is a composite number.	-12	
	tivity ctions	Focus on having young people "compete" in pairs or
Subtraction of Fractions There are three steps to subtracting fractions. Step 1: Make sure the bottom numbers (the design of the step 2: Subtract the top numbers (the numerated denominator. Step 3: Simplify the fraction (if needed) Example: $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$ and then reduce to the sime Complete several examples with the students. should be the same. (In several days, you will different denominators).	small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.	
What's the Difference?		
and pens/crayons3. Shuffle the cards and place them to the right	through the What's the Difference steps to find n problem board and places a marker on it	



	Closing
	Review
Say:	
•	Please recap what we did today.
٠	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.
	ion (Confirm, Tweak, Aha!)
	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



4th – 5th Grade What's the Difference?

5 9	$\frac{3}{5}$	$\frac{1}{3}$	$\frac{6}{7}$	8 9	$\frac{1}{3}$	$\frac{3}{8}$
$\frac{1}{3}$		$\frac{2}{7}$				
$\frac{1}{5}$		$\frac{1}{4}$				
$\frac{1}{2}$		 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. 				
$\frac{2}{5}$	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.					$\frac{1}{7}$
$\frac{1}{2}$		$\frac{1}{4}$				
$\frac{2}{3}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{2}{3}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{9}$



 $4^{th} - 5^{th}$ Grade What's the Difference?

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



Component	Math		
Grade Level:	4 th & 5 th Grades		
Lesson Title:	What's in Common?		
Focus:	Fractions		

Materials:

Cravolas

White boards Vocabulary Notebooks 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 *Activity \rightarrow Teachable Moment(s) *throughout* After Joni's first birthday party she had twice the amount of money she had before the party. During the lesson check in After her second birthday party she had three times the amount of money she had after the with students repeatedly. first birthday party. If she had \$150.00 after the second birthday party, how much money did Check in about what is she have before the first party? How do you know? happening and what they are thinking. Fact Practice Take advantage of any teachable moments. Draw! Stop the class and focus on a 1. Divide students into pairs and give each pair a deck of cards student's key learning or understanding. Ask open-2. Remove the face cards and jokers from the deck of cards. ended questions to 3. Shuffle the deck. determine what the rest of 4. Decide who will go first. the group is thinking. 5. First player draws two cards. 6. Student multiplies the cards. When possible, engage students in a "teach to learn" 7. Student writes his/her problem on the white board, writing a complete number sentence. opportunity and have the 8. Students take turns drawing and creating problems. student become the teacher. Math Vocabulary It is important to review



escription: A common denominator is a tern		often throughout the day
r more fractions have the same denominator. re not common, you cannot add or subtract fra y trying different multiples of the fractions. Fo	often throughout the day. Complete the Vocabulary notebook for each word. When possible, have	
ave a common denominator (in this case 6) ar		students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can
reate a Notebook entry for the term: commo ocabulary Notebook Sample:	0 0	
New Word	My Description	
common denominator	be made from $\frac{1}{2}$ of a composition book.	
Personal Connection	Drawing	
When we divide sandwiches we want to divide each one in thirds, so the common denominator is 3.	$\longrightarrow \frac{3}{6}$ and $\frac{2}{6}$	
Act	ivity	Focus on having young people "compete" in pairs or
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, ½ 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 $35 (7 x 5)$. 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 ½ to 6 th you would set it up this way: $\frac{1}{2} = \frac{1}{6}$ and then to find the numerator, multiply the 1 times the 3 (2x 3) the factor in this problem NOT the denominator and you have the fraction $\frac{3}{6}$. Then you would convert $\frac{1}{3} = \frac{1}{6}$ and then to find the numerator, multiply 1 time the 2 (2 x 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: $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$.		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 s	ame thing in the "real world"?
What advice would you give to a "new" studen	t 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.



$4^{th} - 5^{th}$ Grade Common Denominators #1

15	55	14	10	65	6	65
35						35
34		A common der more fractions	n Denomin nominator is who have the same n the bottom). I	en two or denominator		95
77		denominators "common") you fractions. Loo or both of the o	are not the sam u cannot add or k at the denomin denominators ar only be achieve	e (not subtract the nators. If one re prime		15
77		multiplication to multiply the de	by 1 x the number nominators toge ommon denominations toge	er) then ether and you		77
21						15
55	55	21	33	35	22	91



4th – 5th Grade Common Denominator Cards #1

$\frac{2}{5} \frac{1}{3}$	$\frac{5}{11} \frac{2}{5}$	$\frac{5}{7}$ $\frac{1}{2}$
$\frac{3}{5} \frac{1}{2}$	$\frac{3}{5} \frac{2}{13}$	$\frac{2}{3}$ $\frac{1}{2}$
$\frac{5}{13} \frac{2}{5}$	$\frac{2}{7} \frac{1}{5}$	$\frac{4}{5}$ $\frac{2}{7}$
$\frac{2}{17} \frac{1}{2}$	$\frac{3}{5} \frac{1}{19}$	$\frac{3}{7} \frac{2}{11}$
$\frac{3}{5} \frac{1}{3}$	$\frac{7}{11} \frac{1}{7}$	$\frac{4}{11}$ $\frac{1}{7}$
$\frac{4}{7} \frac{2}{3}$	$\frac{2}{3}$ $\frac{1}{5}$	$\frac{4}{5}$ $\frac{1}{11}$
$\frac{3}{11} \frac{2}{5}$	$\frac{5}{7} \frac{1}{3}$	$\frac{4}{11} \frac{1}{3}$
$\frac{3}{5} \frac{2}{7}$	$\frac{9}{11}$ $\frac{1}{2}$	$\frac{9}{13}$ $\frac{4}{7}$



Component:	Math		
Grade Level:	4 th & 5 th Grades		
Lesson Title:	What's in Common? 2		
Focus: Fractions			

Materials:		
White boards	Vocabulary Noteb	oooks
Crayolas	Double 9 Domino	Des
Activity at the end of the lesso	n 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 is the most challenging this about working with fractions?

	Content (the "Meat")				
		*Activity → Teachable Moment(s) <i>throughout</i>			
answers.	e table to sł	now the val	ue of y for each value of x. Explain how you found your	During the lesson check in with students repeatedly.	
60 ÷ x = y	X 2	Y		Check in about what is happening and what they are thinking.	
	4			Take advantage of any teachable moments.	
	10 12			Stop the class and focus on a student's key learning or	
			Fact Practice	understanding. Ask open-	
for each pai and if possil Players sit a Dominoes a Each studer	r of students ble, laminate cross from re between at draws a d	s in your cla e for use ag each other. them, face omino and	Spots and Dots inos attached to this lesson plan. You will need 1 full set ss. It is recommended that you duplicate on card stock ain in the future. (or spots) down. writes the multiplication problem on their white board, d by the spots Example: Domino drawn is	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.	



••		
Multiplication: 2 x 3 = 6		
Meth Ve	a a hulan i	It is important to review
Word for Today: Z pattern	cabulary	It is important to review academic math vocabulary often throughout the day.
Description: A Z pattern is a way to change fr you have found the common denominator. For you could use the Z pattern. You would begin	Complete the Vocabulary notebook for each word. When possible, have students experience the word	
$\frac{1}{2}$	6	(Ex. 4 students creating a right angle, multiple students acting out an equation).
Step one is to ask yourself how many times 2 w numerator of 1, multiplying it by the 3 you found of 3 and writing it in the space above of the 6.	Vocabulary Notebooks can be made from ½ of a composition book.	
Create an entry for the term Z pattern in your V Vocabulary Notebook Sample:	ocabulary Notebook.	
New Word	My Description	
Z pattern	Looks like a Z or the mirror image of the Z— tells you to zig zag	
Personal Connection	Drawing	
A Z pattern makes finding equal fractions easy.	$\frac{2}{3}$ $\xrightarrow{4}$ $\frac{4}{6}$	
Act Frac	Focus on having young people "compete" in pairs or small groups. Once a game	
Common Denominators A common denominator is when two or more fr number on the bottom). If the denominators ar or subtract the fractions. You can find a comm question:	is mastered you can utilize it in the "When Homework Is Complete" center.	
Look at the denominators. If one or both of the achieved in multiplication by 1 x the number) the will have the common denominator. Then you		



fraction. For example: the two fractions, $\frac{1}{2}$ and $\frac{1}{3}$, 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 x 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 $\frac{1}{6}$ 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 x 1) and the product is the new numerator. Then you	
would convert $\frac{1}{3} = \frac{1}{6}$ by first saying 6 ÷ 3 = 2, and 2 x 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". $4 \div 2 = 2$; $2 \ge 1 = 2$ 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
	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.
Reflect	tion (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

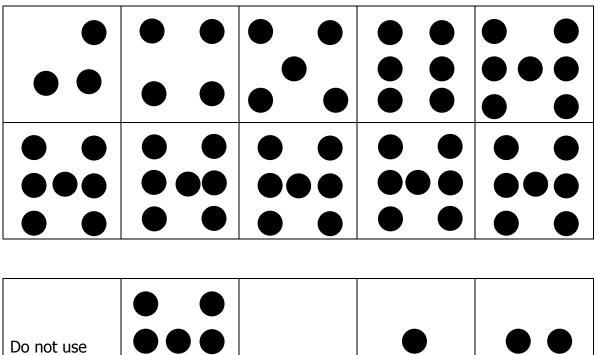
•	•	•••



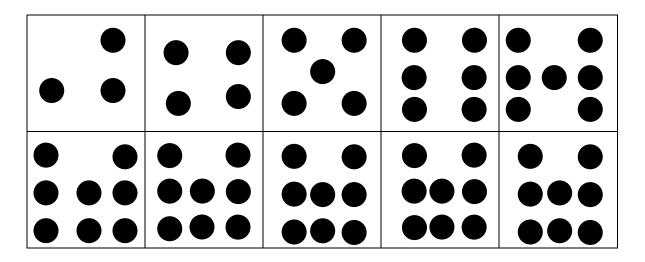
			•	•	•
• •					
\bullet					
	•				
$\bullet \bullet$					
$\bullet \bullet$					



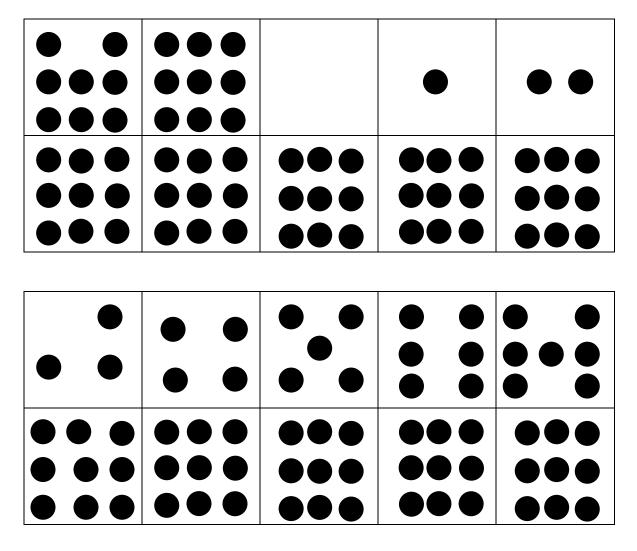




Do not use		
Do not use		









$4^{th} - 5^{th}$ Grade Common Denominators #1

15	55	14	10	65	6	65
35		35				
34		A common der more fractions	n Denomin nominator is who have the same n the bottom). It	en two or denominator		95
77		denominators "common") you fractions. Loo or both of the o	are not the sam u cannot add or k at the denomin denominators ar only be achieve	e (not subtract the nators. If one re prime		15
77		multiplication to multiply the de	by 1 x the number nominators toge ommon denomin	er) then ether and you		77
21						15
55	55	21	33	35	22	91



4 th – 5 th Grade Common	Denominator Cards #1
--	----------------------

$\frac{2}{5} \frac{1}{3}$	$\frac{5}{11} \frac{2}{5}$	$\frac{5}{7}$ $\frac{1}{2}$
$\frac{3}{5} \frac{1}{2}$	$\frac{3}{5} \frac{2}{13}$	$\frac{2}{3}$ $\frac{1}{2}$
$\frac{5}{13} \frac{2}{5}$	$\frac{2}{7} \frac{1}{5}$	$\frac{4}{5} \frac{2}{7}$
$\frac{2}{17} \frac{1}{2}$	$\frac{3}{5} \frac{1}{19}$	$\frac{3}{7} \frac{2}{11}$
$\frac{3}{5} \frac{1}{3}$	$\frac{7}{11}$ $\frac{1}{7}$	$\frac{4}{11} \frac{1}{7}$
$\frac{4}{7} \frac{2}{3}$	$\frac{2}{3} \frac{1}{5}$	$\frac{4}{5} \frac{1}{11}$
$\frac{3}{11} \frac{2}{5}$	$\frac{5}{7} \frac{1}{3}$	$\frac{4}{11} \frac{1}{3}$



3 2	9 1	9 4
5 7	$\overline{11}$ $\overline{2}$	13 7



Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Set It Up Right
Focus:	Fractions

Materials:		
White boards	Vocabulary Notebooks	Activity at end of the lesson plan
Crayolas	6-sided dice; 12-sided dice	
Decks of cards	Socks (use as erasers)	

0	pei	nın	g

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	*Activity → Teachable Moment(s) <i>throughout</i>
Nick has \$11.35. He has no more than four coins and three bills. He has no pennies or half- dollars. How many different combinations are there? How do you know?	During the lesson check in with students repeatedly.
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 X 4 = 36 4 X 9 = 36	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
$36 \div 4 = 9$ $36 \div 9 = 4$ 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	the group is thinking. 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: common denominator 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,	academic math vocabulary often throughout the day. Complete the Vocabulary



review the term in your Vocabulary Notebook something to your original entry. Use the terr Vocabulary Notebook Sample:	with a friend and determine if you need to add n in a sentence.	notebook for each word. When possible, have students experience the word (Ex. 4 students creating a
New Word common denominator	My Description Two fractions that has the same bottom number even if the numerators are different	right angle, multiple students acting out an equation). Vocabulary Notebooks can be made from ½ of a composition book.
Personal Connection These two fractions have a common denominator: $\frac{5}{9}$ and $\frac{7}{9}$.	Drawing $ \frac{x}{8} \frac{n}{8} \frac{o}{8}$	
Fra Adding or Subtracting Fractions When you are adding or subtracting fractions Step 1 : Make sure the bottom numbers (the of Step 2 : Add or subtract the top numbers (the 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 real of in Step 1 you check and the denominators a common denominator and convert one or bot denominator so you can either add or subtract determining the lowest common denominator students of the "Z" pattern.	denominators) are the same numerators). Put the answer over the same educe to the simplest terms. are NOT the same, you will need to first find a h of the fractions to this new common st the fractions. Remember the process of	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.
 Set It Up Right! <u>Directions:</u> Divide students into pairs Give each pair a Set It Up Right game but 3. Together the pair works with each of the subtract. Once the pair has determined how to see Game Board and mark it with a token Activity is complete when all problems has been but a subtract. 	problems to get it set up to either add or t the problem up, they find that set up on the	



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.



$4^{th} - 5^{th}$ Grade Set It Up Right

$\frac{4}{10}$ + $\frac{5}{10}$	$\frac{4}{10}$ $+\frac{5}{10}$	$ \frac{78}{156} \\ + \frac{84}{156} $	$\frac{4}{6} + \frac{1}{6}$	$\frac{1}{12} + \frac{9}{12}$	$\frac{30}{60}$ + $\frac{18}{60}$	$\frac{10}{35}$ + $\frac{21}{35}$
$\frac{\frac{1}{4}}{\frac{2}{4}}$ $\frac{\frac{8}{12}}{\frac{9}{12}}$	-	btracting Fract		ht you will always (go through the	$ \frac{9}{72} + \frac{40}{72} \\ \frac{28}{56} \\ + \frac{24}{56} $
$ \frac{\frac{3}{10}}{+\frac{8}{10}} + \frac{\frac{3}{40}}{\frac{4}{40}} + \frac{20}{40} $	Step 1: Make s Step 2: Add or over the same Step 3: Simplif Example: $\frac{1}{3}$ + If in Step 1 you need to first fir fractions to this the fractions.	subtract the top denominator. fy the fraction (if $\frac{2}{3} = \frac{3}{3}$ or $: \frac{2}{3} - \frac{1}{3}$ u check and the d a common de s new common Remember the	p numbers (the f needed) = $\frac{1}{3}$ and then re denominators a nominator and denominator so process of deter	enominators) ar numerators). Pu duce to the simp are NOT the sam convert one or b you can either a rmining the lowe minding the stud	t the answer blest terms. he, you will both of the add or subtract est common	$\frac{\frac{25}{60}}{+\frac{6}{60}}$ $\frac{\frac{8}{24}}{+\frac{3}{24}}$
$\frac{5}{12}$ + $\frac{3}{12}$	2 pattern					$\frac{24}{30} + \frac{15}{30}$
$\frac{\frac{7}{8}}{\frac{2}{8}}$	$\frac{2}{6}$ + $\frac{5}{6}$	$\frac{5}{8}$ + $\frac{4}{8}$	$\frac{4}{6}$ + $\frac{5}{6}$	$\frac{6}{9}$ + $\frac{4}{9}$	$\frac{\frac{2}{4}}{\frac{+\frac{3}{4}}{4}}$	$\frac{\frac{6}{21}}{\frac{7}{21}}$



4th 5th Grade Set It Up Right

	<u>v</u>		
$\frac{\frac{7}{8}}{\frac{+\frac{1}{4}}{-\frac{1}{4}}}$	$\frac{\frac{1}{3}}{\frac{5}{6}}$	$+\frac{1}{10}$	$\frac{\frac{2}{7}}{\frac{3}{5}}$
$\frac{\frac{3}{10}}{\frac{+\frac{4}{5}}{}}$	$\frac{1}{12} + \frac{3}{4}$	$\frac{\frac{2}{5}}{\frac{+\frac{5}{10}}{10}}$	$\frac{\frac{4}{5}}{\frac{+\frac{3}{6}}{-\frac{1}{6}}}$
$\frac{\frac{1}{4}}{\frac{+\frac{1}{2}}{2}}$	$\frac{2}{3}$ + $\frac{4}{9}$	$\frac{\frac{1}{8}}{\frac{+\frac{5}{9}}{-\frac{5}{9}}}$	$\frac{\frac{2}{7}}{+\frac{1}{3}}$
$ \begin{array}{r} \frac{1}{10} \\ +\frac{4}{8} \\ \end{array} $	$\frac{5}{8}$ $+\frac{1}{2}$	$\frac{\frac{2}{3}}{\frac{1}{6}}$	$\frac{\frac{4}{8}}{\frac{+\frac{3}{7}}{7}}$
$\frac{\frac{2}{3}}{\frac{+\frac{5}{6}}{-\frac{1}{6}}}$	$ \frac{5}{12} + \frac{1}{4} $	$\frac{6}{12}$ $+\frac{7}{13}$	$\frac{\frac{1}{2}}{\frac{+\frac{3}{4}}{4}}$



$\frac{2}{5}$ + $\frac{1}{2}$	$\frac{\frac{2}{3}}{\frac{+\frac{3}{4}}{4}}$	$\frac{\frac{6}{12}}{\frac{+\frac{3}{10}}{10}}$	$\frac{\frac{2}{6}}{+\frac{1}{8}}$
-------------------------------	--	---	------------------------------------



Component	Math
Grade Level:	4 th & 5 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 lesso	on 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	*Activity → Teachable Moment(s) <i>throughout</i>
Desi had \$7.18. Today he earned \$5.85 raking leaves. How much money does he have now? Explain how you know.	During the lesson check in with students repeatedly.
Fact Practice Multiples	Check in about what is happening and what they are thinking.
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	Take advantage of any teachable moments.
 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. 	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.
Math Vocabulary	It is important to review academic math vocabulary
Word for Today: Z pattern Description: Z pattern is a term we use to describe the process for translating fractions into	often throughout the day.



something to your original entry. Use the tern	d closely at this word and what it means. Today with a friend and determine if you need to add n in a sentence.	Notebook for each word. When possible, have students experience the word
New Word	My Description	(Ex. 4 students creating a right angle, multiple students
Z pattern	A pattern that you use to find equivalent fractions	acting out an equation). Vocabulary Notebooks can be made from ½ of a composition book.
Personal Connection	Drawing	
After using the Z pattern I found that $\frac{1}{2}$ is equal to $\frac{5}{10}$.	$\frac{1}{2} \xrightarrow{5} \frac{5}{10}$	
	ctivity	Focus on having young people "compete" in pairs or
When you are adding or subtracting fractions		is mastered you can utilize it in the "When Homework Is Complete" center
When you are adding or subtracting fractions Step 1 : Make sure the bottom numbers (the d Step 2 : Add or subtract the top numbers (the 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 re- f in Step 1 you check and the denominators a common denominator and convert one or both denominator so you can either add or subtract determining the lowest common denominator.	enominators) are the same numerators). Put the answer over the same duce to the simplest terms. are NOT the same, you will need to first find a n of the fractions to this new common t the fractions. Remember the process of	
Adding or Subtracting Fractions When you are adding or subtracting fractions Step 1: Make sure the bottom numbers (the denominator. Step 2: Add or subtract the top numbers (the 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 reaction of the fraction of the denominators are common denominator and convert one or both denominator so you can either add or subtract determining the lowest common denominator. Stel It Up Right! Directions: 1. Divide students into pairs 2. Give each pair a Set It Up Right game both and the subtract.	enominators) are the same numerators). Put the answer over the same duce to the simplest terms. The NOT the same, you will need to first find a of the fractions to this new common t the fractions. Remember the process of Complete several examples, reminding the bard and Problem Card	in the "When Homework Is



	Closing	
	Review	
Say:		
 Please recap what we 	did today.	
• Did we achieve our of	ojectives?	
	Debrief	
Three Whats		
Ask the following three what o	uestions:	
What was your key	earning for the day?	
What opportunities	night 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						1		1
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



$4^{th} - 5^{th}$ Grade Set It Up Right

$\frac{4}{10}$ $+\frac{5}{10}$	$\frac{4}{10}$ $+\frac{5}{10}$	$ \frac{78}{156} \\ + \frac{84}{156} $	$\frac{4}{6} + \frac{1}{6}$	$\frac{1}{12} + \frac{9}{12}$	$\frac{30}{60}$ + $\frac{18}{60}$	$\frac{10}{35}$ + $\frac{21}{35}$
$\frac{\frac{1}{4}}{\frac{2}{4}}$ $+\frac{2}{4}$ $\frac{\frac{8}{12}}{\frac{12}{\frac{9}{12}}}$	-	btracting Fract		ht you will always (go through the	$ \frac{9}{72} + \frac{40}{72} \\ \frac{28}{56} \\ + \frac{24}{56} $
$ \frac{\frac{3}{10}}{\frac{4}{10}} + \frac{8}{10} + \frac{20}{40} + \frac{20}{40} $	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				$\frac{\frac{25}{60}}{+\frac{6}{60}}$ $\frac{\frac{8}{24}}{+\frac{3}{24}}$	
$\frac{5}{12}$ + $\frac{3}{12}$					$\frac{24}{30} + \frac{15}{30}$	
$\frac{\frac{7}{8}}{\frac{2}{8}}$	$\frac{2}{6}$ + $\frac{5}{6}$	$\frac{5}{8}$ + $\frac{4}{8}$	$\frac{4}{6}$ + $\frac{5}{6}$	$\frac{6}{9}$ + $\frac{4}{9}$	$\frac{\frac{2}{4}}{\frac{+\frac{3}{4}}{4}}$	$\frac{6}{21} + \frac{7}{21}$



4th 5th Grade Set It Up Right

$\begin{array}{r} \frac{7}{8} \\ +\frac{1}{4} \\ \hline \end{array}$	$\frac{\frac{1}{3}}{\frac{+\frac{5}{6}}{-\frac{1}{6}}}$	$+\frac{1}{10}$	$\frac{2}{7}$ + $\frac{3}{5}$
$ \frac{\frac{3}{10}}{+\frac{4}{5}} $	$\frac{\frac{1}{12}}{\frac{+\frac{3}{4}}{4}}$	$\frac{\frac{2}{5}}{\frac{+\frac{5}{10}}{10}}$	$\frac{\frac{4}{5}}{\frac{+\frac{3}{6}}{-}}$
$\frac{\frac{1}{4}}{\frac{+\frac{1}{2}}{2}}$	$\frac{\frac{2}{3}}{\frac{4}{9}}$	$\frac{\frac{1}{8}}{\frac{+\frac{5}{9}}{-\frac{5}{9}}}$	$\frac{\frac{2}{7}}{+\frac{1}{3}}$
$ \begin{array}{r} 1 \\ 10 \\ + \frac{4}{8} \\ \end{array} $	$\frac{5}{8}$ $+\frac{1}{2}$	$\frac{\frac{2}{3}}{\frac{1}{6}}$	$\frac{\frac{4}{8}}{\frac{+\frac{3}{7}}{7}}$
$\frac{\frac{2}{3}}{\frac{+\frac{5}{6}}{-\frac{1}{6}}}$	$ \frac{5}{12} \\ +\frac{1}{4} $	$\frac{6}{12}$ $+\frac{7}{13}$	$\frac{\frac{1}{2}}{\frac{+\frac{3}{4}}{4}}$



$\frac{\frac{2}{5}}{\frac{+\frac{1}{2}}{2}}$	$\frac{\frac{2}{3}}{\frac{+\frac{3}{4}}{-}}$	$\frac{\frac{6}{12}}{\frac{+\frac{3}{10}}{10}}$	$\frac{\frac{2}{6}}{\frac{+\frac{1}{8}}{\frac{1}{8}}}$
--	--	---	--



Component	Math	
Grade Level:	4 th & 5 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.