Component	Math
Grade Level:	4th & 5th Grades
Lesson Title:	Multiplication of Fractions
Focus:	Fractions

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? What are the steps you complete to add fractions? What are the steps you complete to subtract fractions? What do you know about multiplying fractions?

Content (the "Meat")

### Problem of the Day	***Activity → Teachable Moment(s) *throughout**
Jorge knows how to solve two-digit multiplication problems. If Jorge were to explain to you what to do in the problem below, what would he tell you, step by step? $$\begin{array}{r} 65 \\ \times\ 47 \\ \hline \end{array}$$	During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking. Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking. When possible, engage students in "teaching to learn".
### 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: denominator

Description: A fraction has two numbers, a numerator, the number on top, and the denominator, the number on the bottom. When you multiply fractions it does not matter if the denominators are the same or not. Unlike addition and subtraction, you simply leave the denominators alone. You multiply numerator times the numerator and the denominator times the denominator, and then reduce to its simplest form.

Review the entry in your Vocabulary Notebook for the word **denominator** with a friend. Make a new entry for the term like denominators.

Vocabulary Notebook Sample:

New Word	My Description
denominators	Denominators are the bottom number of a fraction. It tells you have many parts in the whole.
Personal Connection	**Drawing**
$\frac{1}{8}$ and $\frac{3}{4}$ have two different denominators, 8 and 4.	denominator

Sidebar:

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.

Activity
Fractions

Multiplication of Fractions
When you are multiplying fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are multiplying fractions are written horizontally: For example:

$$\text{½ x ¼ =}$$

Unlike addition and fractions that require the denominators to be the same, in multiplication that is not the case. It is perfectly okay for the denominators are different.
In the multiplication of fractions the operation is relatively simple: numerator times numerator, and denominator times denominator. So in the example above, 1 x 1 = 1, and 2 times 4 equals 8 so the answer would be ⅛. In this particular example, the answer (product) would be in its simplest terms, so you would be finished. If the product was not in the simplest terms, you would want to reduce the product to its lowest terms.
One of the interesting things about multiplication of fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, to ensure that your answer will be in its simplest terms. For example:

$$\frac{3}{4} \text{ x } \frac{8}{15} =$$

will give you a product of $\frac{24}{60}$. Obviously that would need to be reduced to $\frac{2}{5}$. which can be

Sidebar:

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

cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \ "connects" the 3 and the 15. 3 and 15 have a common divisor, 3. Three is divided be three which equals 1, and 15 can be divided by 3 and equals 5. So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5. Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4. These two numbers also have a common divisor, 4. Four will go into 4 one time, and into the 8, two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4}$ x $\frac{8}{15}$ = to $\frac{1}{1}$ x $\frac{2}{5}$ and once multiplied, the answer is in its simplest terms.

Work several problems with the students on the board so they understand the process.

Multiplying Fractions
Directions:
1. Divide students into pairs.
2. Give each pair a set of Multiplying Fractions cards and game board.
3. Shuffle the cards and place between the players.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it.
5. Player 2 continues play in the same way.
6. Game is over when all answers have been covered.

Closing
Review

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

Debrief

Three Whats

Ask the following three what questions:

    What was your key learning for the day?

    What opportunities might you have to do this same thing in the "real world"?

    What advice would you give to a "new" player getting ready to play this game so he/she could get all the blocks are completed?

Reflection (Confirm, Tweak, Aha!)
1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)

4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

4th – 5th Grade Multiplication of Fractions

$\dfrac{1}{6}$ X $\dfrac{3}{5}$ =	$\dfrac{3}{5}$ X $\dfrac{5}{9}$ =	$\dfrac{8}{15}$ X $\dfrac{3}{4}$ =	$\dfrac{5}{12}$ X $\dfrac{9}{25}$ =
$\dfrac{3}{10}$ X $\dfrac{5}{8}$ =	$\dfrac{3}{4}$ X $\dfrac{8}{9}$ =	$\dfrac{2}{3}$ X $\dfrac{9}{10}$ =	$\dfrac{12}{25}$ X $\dfrac{15}{24}$ =
$\dfrac{4}{5}$ X $\dfrac{5}{6}$ =	$\dfrac{2}{3}$ X $\dfrac{7}{10}$ =	$\dfrac{3}{10}$ X $\dfrac{5}{12}$ =	$\dfrac{10}{21}$ X $\dfrac{14}{15}$ =
$\dfrac{3}{4}$ X $\dfrac{12}{13}$ =	$\dfrac{2}{3}$ X $\dfrac{15}{16}$ =	$\dfrac{5}{8}$ X $\dfrac{2}{5}$ =	$\dfrac{6}{21}$ X $\dfrac{9}{10}$ =

4th – 5th Grade Multiplying Fractions Game Board

$\dfrac{1}{10}$	$\dfrac{7}{15}$		$\dfrac{1}{8}$	$\dfrac{1}{3}$
	$\dfrac{2}{5}$		$\dfrac{3}{20}$	$\dfrac{4}{9}$
		$\dfrac{3}{16}$		
$\dfrac{9}{13}$	$\dfrac{2}{3}$		$\dfrac{3}{5}$	$\dfrac{1}{4}$
$\dfrac{3}{10}$	$\dfrac{5}{8}$		$\dfrac{9}{35}$	$\dfrac{2}{3}$

Component	Math
Grade Level:	4th & 5th Grades
Lesson Title:	Multiplication of Fractions 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? What are the steps you complete to add fractions? What are the steps you complete to subtract fractions? What do you know about multiplying fractions? If you were to multiply the denominators in this problem, $\frac{3}{4}$ x $\frac{1}{5}$ = , you would have a new denominator of 20. You would then multiply the numerators and have 3. The product would be $\frac{3}{20}$.

Content (the "Meat")

	Activity → Teachable Moment(s) throughout
### Problem of the Day	During the lesson check in with students repeatedly.
If you know your multiplication facts, how will that help you solve a division problem?	
	Check in about what is happening and what they are thinking.
### Fact Practice	
Fore-header	Take advantage of any teachable moments.
1. Divide students into trios. Give each trio a deck of cards without face cards and jokers.	
2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest	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.
3. On go, players are each handed a card by the referee and **WITHOUT** looking, put the card face out on his/her forehead	
4. The referee multiplies the two numbers together and states the answer	
5. Each player looks at the other person's exposed number and names his/her own number	
6. Person who wins (accuracy and time), collects both cards	
7. Play continues until all cards are gone.	When possible, engage students in "teaching to learn".
8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee	

Math Vocabulary

Word for today: numerators

Description: Numerator is a term we use to describe the top numbers in a fraction. When you multiply a fraction you simply multiply the numerator times the numerator. The total is placed as the numerator of the answer. You must also reduce fractions to the lowest terms in the answer.

Vocabulary Notebook Sample:

New Word	My Description
numerator	The top number of a fraction that tells you how much of the whole you have
Personal Connection	**Drawing**
In ¼ and ¾ the numerators are 1 and 3.	$\frac{3}{8}$ $\frac{5}{8}$

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.

Activity
Fractions

Multiplication of Fractions
When you are multiplying fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are multiplying fractions are written horizontally: For example:

$$½ \text{ x } ¼ =$$

Unlike addition and fractions that require the denominators to be the same, in multiplication that is not the case. It is perfectly okay for the denominators are different.
In the multiplication of fractions the operation is relatively simple: numerator times numerator, and denominator times denominator. So in the example above, 1 x 1 = 1, and 2 times 4 equals 8 so the answer would be ⅛. In this particular example, the answer (product) would be in its simplest terms, so you would be finished. If the product was not in the simplest terms, you would want to reduce the product to its lowest terms.
One of the interesting things about multiplication of fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, to ensure that your answer will be in its simplest terms. For example:

$$\frac{3}{4} \text{ x } \frac{8}{15} =$$

will give you a product of $\frac{24}{60}$. Obviously that would need to be reduced to $\frac{2}{5}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \ "connects" the 3 and the 15. 3 and 15 have a common divisor, 3. Three is divided be three which equals 1, and 15 can be divided by 3 and equals 5. So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5. Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4. These two numbers also have a common divisor, 4.

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

Four will go into 4 one time, and into the 8, two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4}$ x $\frac{8}{15}$ = to $\frac{1}{1}$ x $\frac{2}{5}$ and once multiplied, the answer is in its simplest terms.

Work several problems with the students on the board so they understand the process.

Multiplying Fractions
Directions:
1. Divide students into pairs.
2. Give each pair a set of Multiplying Fractions cards and game board.
3. Shuffle the cards and place between the players.
4. Player 1 draws a card, completes the problem, locates the answer on the game board and marks it.
5. Player 2 continues play in the same way.
6. Game is over when all answers have been covered.

Closing

Review

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

Debrief

Three Whats

Ask the following three what questions:

What was your key learning for the day?

What opportunities might you have to do this same thing in the "real world"?

What advice would you give to a "new" student getting ready to do this activity.

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

4th – 5th Grade Multiplication of Fractions

$\frac{1}{6}$ X $\frac{3}{5}$ =	$\frac{3}{5}$ X $\frac{5}{9}$ =	$\frac{8}{15}$ X $\frac{3}{4}$ =	$\frac{5}{12}$ X $\frac{9}{25}$ =
$\frac{3}{10}$ X $\frac{5}{8}$ =	$\frac{3}{4}$ X $\frac{8}{9}$ =	$\frac{2}{3}$ X $\frac{9}{10}$ =	$\frac{12}{25}$ X $\frac{15}{24}$ =
$\frac{4}{5}$ X $\frac{5}{6}$ =	$\frac{2}{3}$ X $\frac{7}{10}$ =	$\frac{3}{10}$ X $\frac{5}{12}$ =	$\frac{10}{21}$ X $\frac{14}{15}$ =
$\frac{3}{4}$ X $\frac{12}{13}$ =	$\frac{2}{3}$ X $\frac{15}{16}$ =	$\frac{5}{8}$ X $\frac{2}{5}$ =	$\frac{6}{21}$ X $\frac{9}{10}$ =

4th – 5th Grade Multiplying Fractions Game Board

$\dfrac{1}{10}$	$\dfrac{7}{15}$		$\dfrac{1}{8}$	$\dfrac{1}{3}$
	$\dfrac{2}{5}$		$\dfrac{3}{20}$	$\dfrac{4}{9}$
		$\dfrac{3}{16}$		
$\dfrac{9}{13}$	$\dfrac{2}{3}$		$\dfrac{3}{5}$	$\dfrac{1}{4}$
$\dfrac{3}{10}$	$\dfrac{5}{8}$		$\dfrac{9}{35}$	$\dfrac{2}{3}$

Consult 4 Kids Lesson Plans

Component	Math
Grade Level:	4th & 5th Grades
Lesson Title:	Domino Fractions
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? What are the steps you complete to add fractions? What are the steps you complete to subtract fractions? What do you know about multiplying fractions? If you were to multiply the denominators in this problem, $\frac{3}{4} \times \frac{1}{5} =$, you would have a new denominator of 20. You would then multiply the numerators and have 3. The product would be $\frac{3}{20}$. Write several multiplication problems on the board and have students come to the board and solve them.

Content (the "Meat")

Problem of the Day	*Activity → Teachable Moment(s) *throughout*
Study the number sentence below. Write a story to match the number sentence. $$48 \div 6 =$$	During the lesson check in with students repeatedly.

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 x 8 = 56
6. Process continues until all spokes have an equation

Activity → Teachable Moment(s) throughout

During the lesson check in with students repeatedly.

Check in about what is happening and what they are thinking.

Take advantage of any teachable moments

Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.

When possible, engage students in a "teach to learn" opportunity and have the

Consult 4 Kids Lesson Plans

Math Vocabulary

Word for Today: equivalent fractions

Description: Equivalent fractions is a math term that describes two fractions that have the same value even though they are not represented with the same fraction. For example, if you have ½ of a pizza, you could also have $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, or $\frac{5}{10}$. These are all equivalent fractions. No matter how you write it, you have ½ of all that there is. When you understand equivalent fractions it is easier to reduce fractions to the simplest terms.

Students review Vocabulary Notebook, add information as necessary.

Vocabulary Notebook Sample:

New Word	My Description
equivalent fractions	½ and $\frac{100}{200}$ are equivalent fractions
Personal Connection	**Drawing**
My sister and I had equivalent fractional parts of the pizza.	$\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$

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.

Activity
Fractions

Multiplication of Fractions

When you are multiplying fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are multiplying fractions are written horizontally: For example:

$$½ \text{ x } ¼ =$$

Unlike addition and fractions that require the denominators to be the same, in multiplication that is not the case. It is perfectly okay for the denominators are different.

In the multiplication of fractions the operation is relatively simple: numerator times numerator, and denominator times denominator. So in the example above, 1 x 1 = 1, and 2 times 4 equals 8 so the answer would be ⅛. In this particular example, the answer (product) would be in its simplest terms, so you would be finished. If the product was not in the simplest terms, you would want to reduce the product to its lowest terms.

One of the interesting things about multiplication of fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, to ensure that your answer will be in its simplest terms. For example:

$$\frac{3}{4} \text{ x } \frac{8}{15} =$$

will give you a product of $\frac{24}{60}$. Obviously that would need to be reduced to $\frac{2}{5}$. which can be cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \ "connects" the 3 and the 15. 3 and 15 have a common divisor, 3. Three is divided be three which equals 1, and 15 can be divided by 3 and equals 5. So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5. Sometimes there is no common divisor for a

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

pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4. These two numbers also have a common divisor, 4. Four will go into 4 one time, and into the 8, two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4} \times \frac{8}{15} =$ to $\frac{1}{1} \times \frac{2}{5}$ and once multiplied, the answer is in its simplest terms.

Work several problems with the students on the board so they understand the process.

Domino Fractions
Directions:
1. Divide students into pairs.
2. Give each pair as set of Double 9 Dominoes. Remove any domino that has zero spots on ½ of it.
3. Turn the dominoes face down.
4. Player 1 draws 2 dominoes, creates a multiplication problem out of the two dominoes and solves the problem they have created.
5. If the answer is correct, player gets 1 point.
6. Player 2 continues play in the same way.
7. Game is over when one of the players has reached 15 points.

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.

Consult 4 Kids Lesson Plans

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

Materials:

White boards   Vocabulary Notebooks

Crayolas   Dice

Activity at the end of the lesson plan   Socks (use for erasers)

Opening

State the objective

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

Gain prior knowledge by asking students the following questions

Fractions are a key part of being prepared to understand algebra. What do you know about fractions? When would you use your knowledge of fractions in the real world? What are the steps you complete to add fractions? What are the steps you complete to subtract fractions? What do you know about multiplying fractions? If you were to multiply the denominators in this problem, $\frac{3}{4} \times \frac{1}{5} =$, you would have a new denominator of 20. You would then multiply the numerators and have 3. The product would be $\frac{3}{20}$. Write several multiplication problems on the board and have students come to the board and solve them.

Content (the "Meat")

	*Activity → Teachable Moment(s) *throughout*
Problem of the Day List 10 different fruits, vegetables or meats that you could buy at the grocery store. My each item on the list, tell whether these would be weight by ounces or pounds.	During the lesson check in with students repeatedly.
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 9 8 7 6 5 4 3 2 1	Check in about what is happening and what they are thinking. Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the

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

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Math Vocabulary

Word for today: reduce

Description: Reduce is the term we use to discuss how to make fractions more manageable. If you have a fraction that is $\frac{150}{300}$, even though the numerator and the denominator are large, the fact is that you still have ½ of the whole thing. Understanding how much you have is easier when the fraction has been reduced to its lowest form. To reduce a fraction you do the same to both the numerator and the denominator which allows the relationship to stay in proportion.

Look in your notebook at your entry for the term "reduce". Add any information that you believe makes more sense.

Vocabulary Notebook Sample:

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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.

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New Word	My Description
reduce	a fraction like $\frac{75}{100}$ is easier to understand when reduced to $\frac{3}{4}$.

Personal Connection	**Drawing**
If I eat 4 of the eight pieces of pizza, then I have eaten ½ of it.	$\frac{4}{8}$ can be reduced to

Activity **Fractions** **Multiplication of Fractions** When you are multiplying fractions, set up is very important. Unlike addition and subtraction of fractions that need to be written vertically, the problems when you are multiplying fractions are written horizontally: For example: **½ x ¼ =** Unlike addition and fractions that require the denominators to be the same, in multiplication that is not the case. It is perfectly okay for the denominators are different. In the multiplication of fractions the operation is relatively simple: numerator times numerator, and denominator times denominator. So in the example above, 1 x 1 = 1, and 2 times 4 equals 8 so the answer would be ⅛. In this particular example, the answer (product) would be in its simplest terms, so you would be finished. If the product was not in the simplest terms, you would want to reduce the product to its lowest terms. One of the interesting things about multiplication of fractions is that you can do some things with the numerator and denominator prior to multiplying numerators and denominators, to ensure that your answer will be in its simplest terms. For example: $\frac{3}{4}$ x $\frac{8}{15}$ = will give you a product of $\frac{24}{60}$. Obviously that would need to be reduced to $\frac{2}{5}$. which can be	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.

cumbersome. However, there is something that can happen to make that easier. If you look at the multiplication sign, there are two diagonal lines. One of the lines \ "connects" the 3 and the 15. 3 and 15 have a common divisor, 3. Three is divided be three which equals 1, and 15 can be divided by 3 and equals 5. So before we multiply the fraction, we are going to change the 3 to 1 and the 15 to 5. Sometimes there is no common divisor for a pair of numbers that are connected, but it is always good to check. The second part of the X, the /, "connects" the 8 and the 4. These two numbers also have a common divisor, 4. Four will go into 4 one time, and into the 8, two times. Once this process is complete, the problem we are multiplying has changed from $\frac{3}{4}$ x $\frac{8}{15}$ = to $\frac{1}{1}$ x $\frac{2}{5}$ and once multiplied, the answer is in its simplest terms.

Work several problems with the students on the board so they understand the process.

Domino Fractions
Directions:
1. Divide students into pairs.
2. Give each pair as set of Double 9 Dominoes. Remove any domino that has zero spots on ½ of it.
3. Turn the dominoes face down.
4. Player 1 draws 2 dominoes, creates a multiplication problem out of the two dominoes and solves the problem they have created.
5. If the answer is correct, player gets 1 point.
6. Player 2 continues play in the same way.
7. Game is over when one of the

Closing

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.

Consult 4 Kids Lesson Plans

Component	Math
Grade Level:	4th & 5th Grades
Lesson Title:	Mixed Multiplication
Focus:	Fractions

Materials:
White boards   Vocabulary Notebooks   Crayolas   Cards   Activities at the end of this lesson plan   Socks (use as erasers)

Opening

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

Gain prior knowledge by asking students the following questions
Fractions are a key part of being prepared to understand algebra. What is meant by a mixed number? If you wanted to change a mixed number into a fraction, what type of a fraction would it become? Why would you want to work with a mixed fraction? How would converting a mixed number to an improper fraction be helpful in multiplication of fractions?

Content (the "Meat")

Content	*Activity → Teachable Moment(s) *throughout*
Problem of the Day The chorus has 94 members. It is going to be taken to the concert in a van that will hold 8 people. How many vans will they need? **Fact Practice** **Target** 1. Divide students into trios 2. Each trio needs a deck of cards without face cards and jokers 3. Place the cards face up in a TicTac Toe Grid 4. Turn up a 10th 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 x 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	During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking. Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.

Consult 4 Kids Lesson Plans

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

Word for Today: mixed number

Description: Mixed number is a mathematical term that refers to the combination of a whole number and a fraction to describe a value. For example, 3 ½ is a mixed number. It tells you that there are 3 whole items and ½ of a fourth item.

Students should review their Vocabulary Notebook and have an accurate and informative entry for the term "mixed number".

Vocabulary Notebook Sample:

New Word	My Description
mixed number	A whole number and a fraction as one number

Personal Connection	Drawing
My little brother is 7 ½ years old.	

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.

Activity
Fractions

Multiplication of Mixed Numbers
The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
The first thing that students must understand is that every whole number can be written as a fraction by placing a "1" as the denominator. So, the number 8 can also be written as $\frac{8}{1}$.
Once that is done, the problem is easy to complete because the problem is solved with numerator times numerator and denominator times denominator.
The first mixed number multiplication problems we will do will require only this process.
Complete several problems on the board with students.

Mixed Multiplication (Riddle #1)
Directions:
1. Divide students into pairs.
2. Give each pair a Mixed Multiplication Card and Riddle Card.
3. Working together, students solve the problems on the Multiplication Card, locate the answer on the Riddle Card, and write the letter on the line to uncover the riddle.
4. Not all answers will be used in the riddle answer.

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

Closing

Review

Say:

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

Debrief

Three Whats

Ask the following three what questions:

What was your key learning for the day?

What opportunities might you have to do this same thing in the "real world"?

What advice would you give to a "new" student getting ready to do this activity.

Reflection (Confirm, Tweak, Aha!)

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

4th – 5th Grade Mixed Multiplication Card

B $4 \times \frac{1}{2} =$	O $2 \times \frac{2}{5} =$	P $4 \times \frac{2}{7} =$
L $3 \times \frac{5}{6} =$	A $8 \times \frac{1}{8} =$	M $\frac{2}{5} \times 3 =$
H $\frac{1}{8} \times 5 =$	E $\frac{5}{7} \times 5 =$	R $\frac{2}{3} \times 2 =$
C $\frac{3}{11} \times 4 =$	I $\frac{1}{3} \times 7 =$	Y $4 \times \frac{3}{4} =$
T $\frac{6}{8} \times 2 =$	F $5 \times \frac{4}{5} =$	K $3 \times \frac{1}{4} =$

4th – 5th Grade Mixed Multiplication
Riddle # 1

2	1	$1\frac{1}{3}$	1	$1\frac{1}{11}$	$\frac{3}{4}$

$\frac{4}{5}$	2	1	$1\frac{1}{5}$	1

Be sure to not share the answer with the students.

First African American President of the United States: Barack Obama

Consult 4 Kids Lesson Plans

Component	Math
Grade Level:	4th & 5th Grades
Lesson Title:	Mixed Multiplication 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 is meant by a mixed number? If you wanted to change a mixed number into a fraction, what type of a fraction would it become? Why would you want to work with a mixed fraction? How would converting a mixed number to an improper fraction be helpful in multiplication of fractions?

Content (the "Meat")

Problem of the Day	*Activity → Teachable Moment(s) *throughout*
The chorus has 94 members. It is going to be taken to the concert in a van that will hold 8 people. How many vans will they need?	During the lesson check in with students repeatedly.
Fact Practice	Check in about what is happening and what they are thinking.
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.	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.
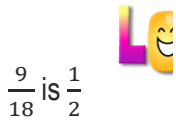
Math Vocabulary	It is important to review academic math vocabulary often throughout the day

Word for Today: simplify

Description: Simplify is a math term that refers to writing a fraction or an equation in its easiest to understand form. When you look at a fraction, while $\frac{75}{150}$ is the same as ½ , it is just easier to get your head around the concept of ½ . When the fraction is written as ½ it has been simplified.

Create an entry of the term composite in the vocabulary notebook.

Vocabulary Notebook Sample:

New Word	**My Description**
simplify	Write things in is easiest to understand form.
Personal Connection My brother says he is 7 ¾ year old, I say he is almost 8.	**Drawing** $\frac{9}{18}$ is $\frac{1}{2}$

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.

Activity
Fractions

Multiplication of Mixed Numbers
The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
The first thing that students must understand is that every whole number can be written as a fraction by placing a "1" as the denominator. So, the number 8 can also be written as $\frac{8}{1}$.
Once that is done, the problem is easy to complete because the problem is solved with numerator times numerator and denominator times denominator.
The first mixed number multiplication problems we will do will require only this process.
Complete several problems on the board with students.

Mixed Multiplication (Riddle #2)
Directions:
1. Divide students into pairs.
2. Give each pair a Mixed Multiplication Card and Riddle Card.
3. Working together, students solve the problems on the Multiplication Card, locate the answer on the Riddle Card, and write the letter on the line to uncover the riddle.
4. Not all answers will be used in the riddle answer.

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

Closing

Review

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

Debrief

Three Whats

Ask the following three what questions:

What was your key learning for the day?

What opportunities might you have to do this same thing in the "real world"?

What advice would you give to a "new" student getting ready to do this activity.

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

Product Hunt

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

4th – 5th Grade Mixed Multiplication Card

B	O	P
$4 \times \frac{1}{2} =$	$2 \times \frac{2}{5} =$	$4 \times \frac{2}{7} =$
L	A	M
$3 \times \frac{5}{6} =$	$8 \times \frac{1}{8} =$	$\frac{2}{5} \times 3 =$
H	E	R
$\frac{1}{8} \times 5 =$	$\frac{5}{7} \times 5 =$	$\frac{2}{3} \times 2 =$
C	I	Y
$\frac{3}{11} \times 4 =$	$\frac{1}{3} \times 7 =$	$4 \times \frac{3}{4} =$
T	F	K
$\frac{6}{8} \times 2 =$	$5 \times \frac{4}{5} =$	$3 \times \frac{1}{4} =$

Riddle # 2
4th – 5th Grade Mixed Multiplication

$\frac{5}{8}$	1	$1\frac{1}{3}$	$1\frac{1}{3}$	3

$1\frac{1}{7}$	$\frac{4}{5}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{4}{7}$	$1\frac{1}{3}$

Hero of books with Dumbledore, Hermione, and Ron: Harry Potter

Component	Math
Grade Level:	4th & 5th Grades
Lesson Title:	Mixed Multiplication 3
Focus:	Fractions

Materials:

White boards	Vocabulary Notebooks
Crayolas	Decks of cards
Activity at the end of the lesson plan	Socks (use as erasers)

Opening

State the objective

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

Gain prior knowledge by asking students the following questions

When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students simplify the answer.

Content (the "Meat")

	*Activity → Teachable Moment(s) *throughout*
Problem of the Day Joni purchased pink thumb print cookies and chocolate thumb print cookies. She placed 4 cookies in each of 6 bags and had 4 cookies left over. If Joni purchased 16 pink thumb print cookies, how many chocolate thumb print cookies did she buy? How do you know?	During the lesson check in with students repeatedly.
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.	Check in about what is happening and what they are thinking. Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.
Math Vocabulary **Word for Today: reduce** **Description:** The mathematical term, reduce, is used when we discuss the answer in an	It is important to review academic math vocabulary often throughout the day.

addition, subtraction, multiplication, and/or division problem when we are working with fractions. Fractions are reduced when they are written in the simplest terms. For example, $\frac{4}{8}$ is not a fraction in its lowest terms, ½ is. Reducing the fractions is part of the process. Include the word reduce in the math Vocabulary Notebook.

Vocabulary Notebook Sample:

New Word	My Description
reduce	to put in its simplest form
Personal Connection	**Drawing**
Please reduce that fraction to its lowest terms.	$\frac{8}{10} = \frac{4}{5}$

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.

Activity
Fractions

Multiplication of Mixed Numbers
The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
5 ½ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 x 5 = 10 + 1 for a total of $\frac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the X (\ or /), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

Mixed Multiplication #3
Directions:
1. Divide students into pairs.
2. Give each pair a Mixed Multiplication card and Answer Game Board.
3. Working together, pair solves the problems on the Mixed Multiplication Card, and then marks off the answers on the game board.
4. Activity is complete when all answers on the game board are marked off.

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

Closing
Review

Say:

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

Debrief

Three Whats

Ask the following three what questions:

What was your key learning for the day?

What opportunities might you have to do this same thing in the "real world"?

What advice would you give to a "new" student getting ready to do this activity.

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

4th and 5th Grade Mixed Multiplication #2

2 x $2\frac{1}{3}$ =   3 x $5\frac{1}{5}$ =   9 x $3\frac{2}{3}$ =

8 x $9\frac{1}{10}$ =   4 x $5\frac{1}{8}$ =   6 x $3\frac{1}{6}$ =

5 x $6\frac{5}{8}$ =   3 x $9\frac{1}{3}$ =   7 x $1\frac{3}{4}$ =

7 x $2\frac{3}{5}$ =   4 x $2\frac{1}{2}$ =   7 x $2\frac{1}{7}$ =

4th – 5th Grade ;Mixed Number #2 Answer Card

$4\frac{2}{3}$	$15\frac{3}{5}$	33
$72\frac{4}{5}$	$20\frac{1}{2}$	19
$33\frac{1}{8}$	28	$12\frac{1}{4}$
$18\frac{1}{5}$	10	15

Component:	Math
Grade Level:	4th & 5th Grades
Lesson Title:	Mixed Multiplication 4
Focus:	Fractions

Materials:

White boards   Vocabulary Notebooks

Crayolas   Double 9 Dominoes

Activity at the end of the lesson plan   Socks (use for erasers)

Opening

State the objective

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

Gain prior knowledge by asking students the following questions

When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students simplify the answer.

Content (the "Meat")

Problem of the Day	*Activity → Teachable Moment(s) *throughout*
Use the digits below to create a fact family (remember that this will be four problems). **9 54 6**	During the lesson check in with students repeatedly.

Fact Practice

Spots and Dots

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

Players sit across from each other.

Dominoes are between them, face (or spots) down.

Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is
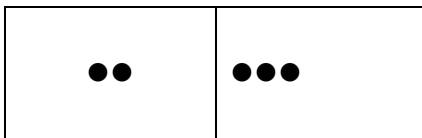
Multiplication: 2 x 3 = 6

Check in about what is happening and what they are thinking.

Take advantage of any teachable moments.

Stop the class and focus on a student's key learning or understanding. Ask open-ended questions to determine what the rest of the group is thinking.

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

Math Vocabulary

Word for Today: Z pattern
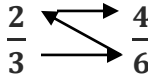
Description: A Z pattern is a way to change fractions quickly into an equivalent fraction once you have found the common denominator. For example: if you need to change ½ into 6th s, you could use the Z pattern. You would begin by writing the two fractions this way:

$$\frac{1}{2} = \frac{}{6}$$

Step one is to ask yourself how many times 2 will go into 6 (answer is 3), and then Z up to the numerator of 1, multiplying it by the 3 you found when you divided 2 into 6, finding the answer of 3 and writing it in the space above of the 6.

Review your entry for the descriptive term "Z pattern".

Vocabulary Notebook Sample:

New Word	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.	$\frac{2}{3}$ ⟋⟍ $\frac{4}{6}$

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.

Activity
Fractions

Multiplication of Mixed Numbers
The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
5 ½ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 x 5 = 10 + 1 for a total of $\frac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the X (\ or /), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

Mixed Multiplication #4
<u>Directions:</u>

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

1. Divide students into pairs.
2. Give each pair a Mixed Multiplication card and Answer Game Board.
3. Working together, pair solves the problems on the Mixed Multiplication Card, and then marks off the answers on the game board.
4. Activity is complete when all answers on the game board are marked off.

Closing

Review

Say:

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

Debrief

Three Whats

Ask the following three what questions:

What was your key learning for the day?

What opportunities might you have to do this same thing in the "real world"?

What advice would you give to a "new" student getting ready to do this activity.

Reflection (Confirm, Tweak, Aha!)
1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
4. Ask them to comment on something (if anything) they have learned today that was brand new to them.
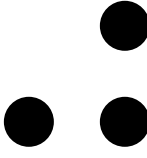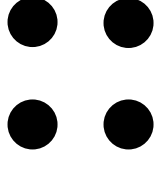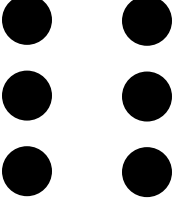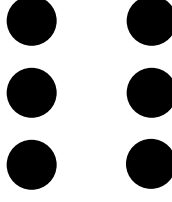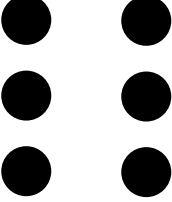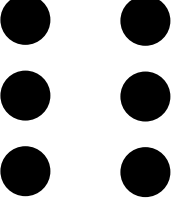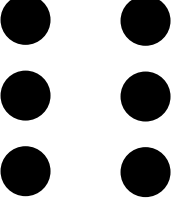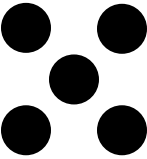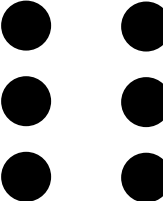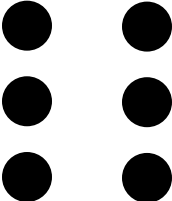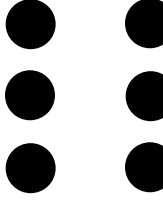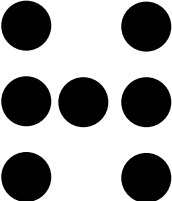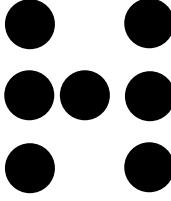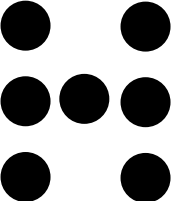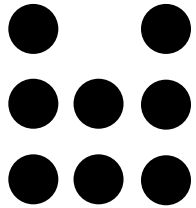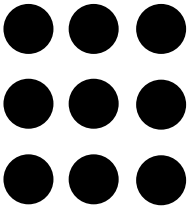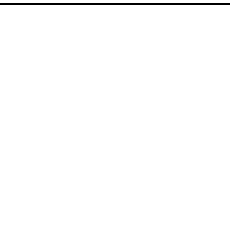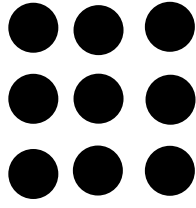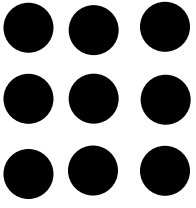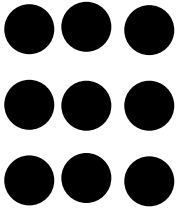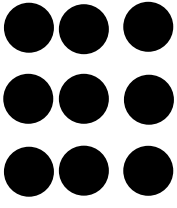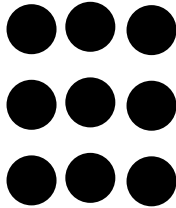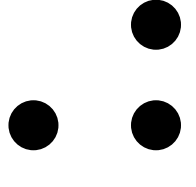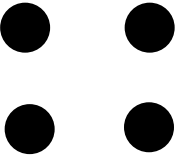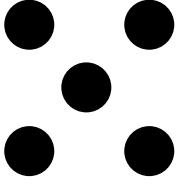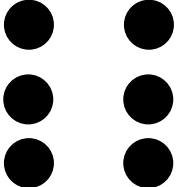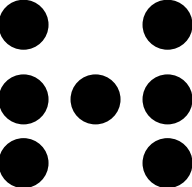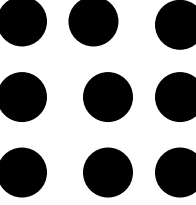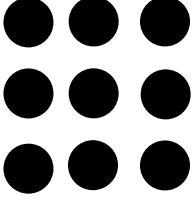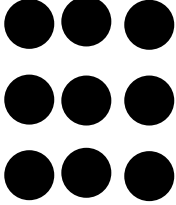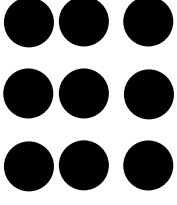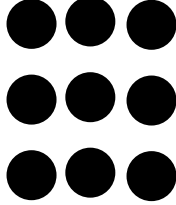
Double 9 Dominoes

4th and 5th Grade Mixed Multiplication #2

$2 \times 2\frac{1}{3} =$ $3 \times 5\frac{1}{5} =$ $9 \times 3\frac{2}{3} =$

$8 \times 9\frac{1}{10} =$ $4 \times 5\frac{1}{8} =$ $6 \times 3\frac{1}{6} =$

$5 \times 6\frac{5}{8} =$ $3 \times 9\frac{1}{3} =$ $7 \times 1\frac{3}{4} =$

$7 \times 2\frac{3}{5} =$ $4 \times 2\frac{1}{2} =$ $7 \times 2\frac{1}{7} =$

4th – 5th Grade Mixed Number #2 Answer Card

$4\frac{2}{3}$	$15\frac{3}{5}$	33
$72\frac{4}{5}$	$20\frac{1}{2}$	19
$33\frac{1}{8}$	28	$12\frac{1}{4}$
$18\frac{1}{5}$	10	15

Consult 4 Kids Lesson Plans

Component	Math
Grade Level:	4th & 5th Grades
Lesson Title:	What's My Product?
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)	

Opening

State the objective

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

Gain prior knowledge by asking students the following questions

When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students simplify the answer.

Content (the "Meat")

	*Activity → Teachable Moment(s) *throughout*
Problem of the Day Jorge wants to display his Hot Wheels collection. When he places his cars in groups of 2, 4 and 7, there is one car left over. When he places the cars in groups of 3 and 9, he has two cars left over. What is the smallest number of cars that Steven could have in his collection? How do you know?	During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.
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 36 ÷ 4 = 9 36 ÷ 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	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 Vocabulary **Word for Today: product** **Description:** Product is the answer you find when you work with a multiplication problem	It is important to review academic math vocabulary often throughout the day.

whether it is whole number, fractions, or whole numbers and fractions. Write several fraction multiplication problems on the board and ask students to solve for the product and then be sure that it is reduced to its lowest or simplest terms.

Vocabulary Notebook Sample:

New Word	My Description
product	the answer to a multiplication problem
Personal Connection	**Drawing**
The product of ½ x ¾ is ⅜	$\dfrac{1}{8}$ **X** $\dfrac{5}{8}$ $\dfrac{5}{8}$

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.

Activity
Fractions

Multiplication of Mixed Numbers
The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
5 ½ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 x 5 = 10 + 1 for a total of $\dfrac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the X (\ or /), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

What's My Product?
Directions:
1. Divide students into pairs.
2. Give each pair a What's My Product deck and Game Board and one 6-sided die. Give students white boards as well.
3. Shuffle the cards and place them face down in between the students.
4. Player 1 draws a card, completes the problem. If the answer is correct, player rolls the die and moves that many spaces.
5. Player 2 continues play in the same way.
6. Game is over when one player reaches the "finish" square.

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

Closing

Review

Say:

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

Debrief

Three Whats

Ask the following three what questions:

What was your key learning for the day?

What opportunities might you have to do this same thing in the "real world"?

What advice would you give to a "new" student getting ready to do this activity.

Reflection (Confirm, Tweak, Aha!)

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

4th – 5th Grade What's My Product Game Board

Finish ↓

START ↑

4th – 5th Grade What's My Product? Cards

$3 \times 5\frac{1}{5} =$	$3\frac{1}{2} \times 2\frac{1}{2} -$	$2 \times 2\frac{1}{3} =$	$8\frac{5}{6} \times 3\frac{6}{7} =$
$4\frac{2}{5} \times 6\frac{2}{3} =$	$4\frac{2}{9} \times 5\frac{10}{11} =$	$2\frac{2}{3} \times 4\frac{2}{5} =$	$5\frac{3}{4} \times 6\frac{1}{4} =$
$2\frac{8}{9} \times 7\frac{7}{8} =$	$7\frac{1}{4} \times 3\frac{3}{7} =$	$6\frac{7}{8} \times 3\frac{1}{3} =$	$7\frac{9}{10} \times 8\frac{7}{8} =$
$4\frac{1}{4} \times 3\frac{5}{6} =$	$8\frac{3}{5} \times 1\frac{1}{2} =$	$8\frac{1}{4} \times 6\frac{2}{3} =$	$7\frac{2}{5} \times 6\frac{2}{3} =$
$2\frac{5}{6} \times 12\frac{4}{5} =$	$4\frac{2}{7} \times 6\frac{1}{10} =$	$5\frac{1}{5} \times 4\frac{1}{3} =$	$9\frac{9}{10} \times 4\frac{7}{8} =$
$1\frac{10}{13} \times 2\frac{9}{13} =$	$8\frac{3}{5} \times 4\frac{5}{6} =$	$1\frac{1}{3} \times 1\frac{2}{3} =$	$4\frac{5}{6} \times 2\frac{3}{8} =$
$3\frac{3}{4} \times 2\frac{2}{9} =$	$4\frac{2}{5} \times 3\frac{3}{4} =$	$1\frac{1}{4} \times 1\frac{2}{5} =$	$2\frac{1}{3} \times 4\frac{1}{2} =$
$3\frac{1}{4} \times 3\frac{6}{7} =$	$1\frac{1}{3} \times 1\frac{1}{2} =$	$3\frac{1}{3} \times 1\frac{3}{4} =$	$4\frac{3}{8} \times 1\frac{1}{5} =$

Consult 4 Kids Lesson Plans

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

Materials:

White boards   Vocabulary Notebooks

Crayolas   Decks of cards

Activity at the end of the lesson plan   Socks (use as erasers)

Opening

State the objective

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

Gain prior knowledge by asking students the following questions

When you multiply what is the strategy you use with mixed numbers? Write several problems on the board with the multiplication of mixed numbers. Ask individual students to come up and solve the problems. Be sure that students simplify the answer.

Content (the "Meat")

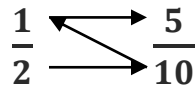|	*Activity → Teachable Moment(s) *throughout*
Problem of the Day Jack and his 2 friends mowed lawns for a month. Last month Jack and his friends earned $467. If Jack divides the money evenly among himself and his 2 friends, and they decide that the left over money will go to supplies, how much money will be left for supplies.	During the lesson check in with students repeatedly. Check in about what is happening and what they are thinking.

Fact Practice
Multiples
 	
Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas (150 chart).
  1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice)
  2. Mark all multiples of the number and then pass off to the next person.
  3. Player may mark the same number.
	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 Vocabulary

Word for Today: Z pattern

Description: Z pattern is a term we use to describe the process for translating fractions into equivalent fractions. This is a pattern that describes the process of finding equivalent fractions. Turn to a partner and explain the process to them. Then review your Vocabulary Notebook entry. Add to it if you need to do so.

Vocabulary Notebook Sample:

New Word	My Description
Z pattern	A pattern that you use to find equivalent fractions
Personal Connection	**Drawing**
After using the Z pattern I found that ½ is equal to $\frac{5}{10}$.	$\frac{1}{2}$ $\frac{5}{10}$

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.

Activity
Fractions

Multiplication of Mixed Numbers
The multiplication of mixed numbers is similar to the process of multiplying simple fractions, with some additional preliminary steps.
Sometimes a mixed number will be a whole number and a fraction. For example:
5 ½ if a mixed number. In order to multiply a fraction times a mixed number it is important to first turn the mixed number into an improper fraction. To do that we multiply the denominator times the whole number and then add the numerator. In the example above, you would say 2 x 5 = 10 + 1 for a total of $\frac{11}{2}$. Now you can multiply using the same process as before.
Students should remember to look at numerator and the denominator connected by a piece of the X (\ or /), and then multiplying.

Work several of these problems on the board with students. Explain that the multiplication of fractions is not hard, there are just lots of steps. Make a "recipe" card with the students and list the steps so students can remember the steps and the order.

What's My Product?
Directions:
1. Divide students into pairs.
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3. Shuffle the cards and place them face down in between the students.
4. Player 1 draws a card, completes the problem. If the answer is correct, player rolls the die and moves that many spaces.
5. Player 2 continues play in the same way.
6. Game is over when one player reaches the "finish" square.

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

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

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

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

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

4th – 5th Grade What's My Product Game Board

Finish ↓

START ↑

4th – 5th Grade What's My Product? Cards

$3 \times 5\frac{1}{5} =$	$3\frac{1}{2} \times 2\frac{1}{2}$ -	$2 \times 2\frac{1}{3} =$	$8\frac{5}{6} \times 3\frac{6}{7} =$
$4\frac{2}{5} \times 6\frac{2}{3} =$	$4\frac{2}{9} \times 5\frac{10}{11} =$	$2\frac{2}{3} \times 4\frac{2}{5} =$	$5\frac{3}{4} \times 6\frac{1}{4} =$
$2\frac{8}{9} \times 7\frac{7}{8} =$	$7\frac{1}{4} \times 3\frac{3}{7} =$	$6\frac{7}{8} \times 3\frac{1}{3} =$	$7\frac{9}{10} \times 8\frac{7}{8} =$
$4\frac{1}{4} \times 3\frac{5}{6} =$	$8\frac{3}{5} \times 1\frac{1}{2} =$	$8\frac{1}{4} \times 6\frac{2}{3} =$	$7\frac{2}{5} \times 6\frac{2}{3} =$
$2\frac{5}{6} \times 12\frac{4}{5} =$	$4\frac{2}{7} \times 6\frac{1}{10} =$	$5\frac{1}{5} \times 4\frac{1}{3} =$	$9\frac{9}{10} \times 4\frac{7}{8} =$
$1\frac{10}{13} \times 2\frac{9}{13} =$	$8\frac{3}{5} \times 4\frac{5}{6} =$	$1\frac{1}{3} \times 1\frac{2}{3} =$	$4\frac{5}{6} \times 2\frac{3}{8} =$
$3\frac{3}{4} \times 2\frac{2}{9} =$	$4\frac{2}{5} \times 3\frac{3}{4} =$	$1\frac{1}{4} \times 1\frac{2}{5} =$	$2\frac{1}{3} \times 4\frac{1}{2} =$
$3\frac{1}{4} \times 3\frac{6}{7} =$	$1\frac{1}{3} \times 1\frac{1}{2} =$	$3\frac{1}{3} \times 1\frac{3}{4} =$	$4\frac{3}{8} \times 1\frac{1}{5} =$

Component	Math
Grade Level:	4th & 5th Grade
Lesson Title:	Student Activity Choice
Focus:	Review

Materials:
Game Boards for games below

Opening

State the objective
Today we are going to have fun playing games that we learned this week.

Content (the "Meat")

Activity

Today is a review day. Students should select from the following list of activities:

Multiplying Fractions
Domino Fractions
Mixed Multiplication Riddle #1
Mixed Multiplication Riddle #2
Mixed Multiplication #2
What's My Product?

Closing

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

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