Tier 3
Intervention Lessons

4.NF.4b

Learning Target: I will multiply a fraction by a whole number

Readiness for 5.NF.4b: Multiply a fraction by fraction

Table of Contents

Tier 3 Intervention Planning Guide

Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

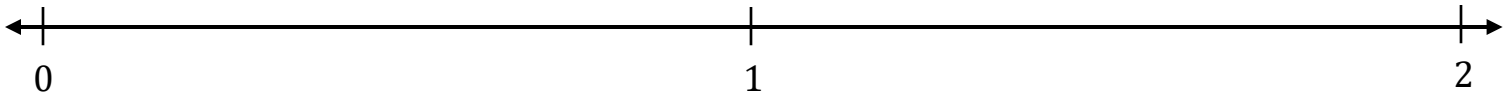
Recommended Actions	
Beginning (5 min.)	➢ Review the learning target with the whole group ➢ Ask each student to set a goal for the day based on their previous Quick Check Score ➢ Have each student use a highlighter to plot their goal for the day
Middle (15 min.)	➢ Model solving a word problem – "I do" *(Sessions 1, 3 and 6 only)* ➢ Guided Practice – "We do" **Sessions 1 and 2:** Use fraction strips to multiply a fraction by a whole number **Sessions 3, 4 and 5:** Use number lines to multiply a fraction by a whole number **Sessions 6, 7 and 8:** Use understanding of multiplication as repeated addition to multiply a fraction by a whole number
End (10 min.)	➢ Bring the students back together. ➢ Ask students to reflect on their progress towards the learning target o What did I learn today about multiplying a fraction by a whole number? o How confident do you feel about multiplying a fraction by a whole number on my own? (Thumbs up, down, or sideways) ➢ Assess each student's progress using the next **Quick Check** form ➢ Guide students to self-correct their **Quick Check** ➢ Guide students to chart their progress in their **Growth Chart** o If not using Delta Math lessons, record the activity in the table ➢ Collect each student's **Quick Check** and **Growth Chart**
After Session 6	➢ Differentiation Options: o Allow students who met the learning goal to work independently while others do the guided practice during the next session o Exit students who met the learning goal for a third time ➢ Problem solve with a team to plan additional support for students who do not meet the learning goal within 8 sessions

Session 1: Modeling (I Do)

Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

Sam is having some of his friends over for a cookout. If he plans to serve 7 one-quarter pound hamburgers, how many pounds of ground hamburger meat will he need to purchase?



Session 1: **Modeling** (I Do – Visual Support)

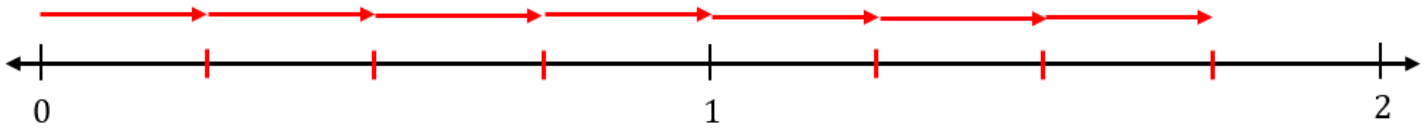
Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

Sam is having some of his friends over for a cookout. If he plans to serve 7 one-quarter pound hamburgers, how many pounds of ground hamburger meat will he need to purchase?

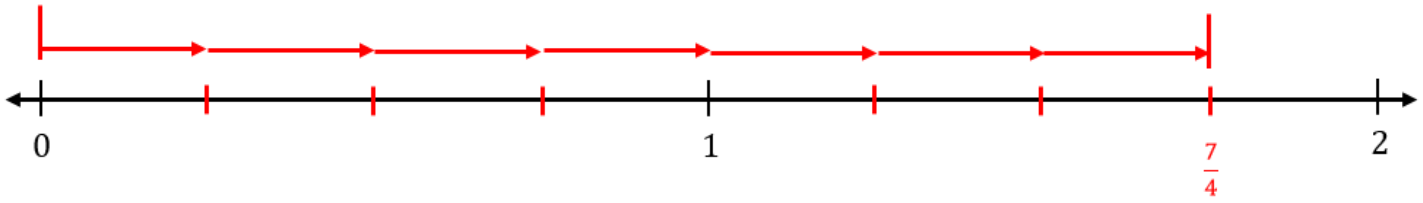
Draw 7 groups of 1-fourth

$$7 \times \frac{1}{4}$$



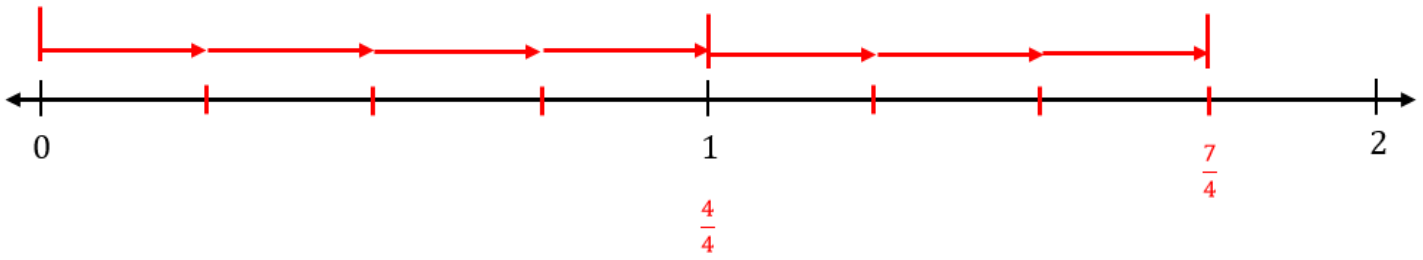
Identify the total

$$7 \times \frac{1}{4} = \frac{7}{4}$$



SImplify the total

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



Session 1: **Modeling** (I Do - Teacher Notes)

Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

Sam is having some of his friends over for a cookout. If he plans to serve 7 one-quarter pound hamburgers, how many pounds of ground hamburger meat will he need to purchase?

I am going to think aloud to model solving this problem.

Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.

This problem is about Sam having some of his friends over for a cookout.

Second, I need to determine what I need to find.

I need to find how much ground hamburger meat he needs to purchase.

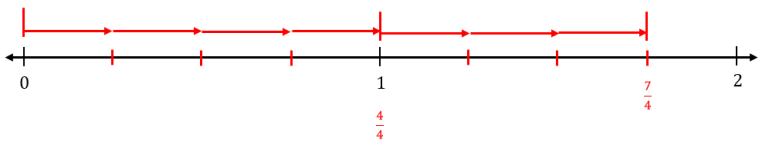
Third, I need to determine what I know.

I know that he plans to make 7 one-quarter pound hamburgers.

Fourth, I need to figure out what I can try.

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

I am going to try using fraction strips and a number line to multiply 1 fourth by 7.
(Hold up a template of fraction strips and write the multiplication problem.)



I am going fold my fraction template to so that the "fourths" are visible as the bottom row…
(Fold the template so that four-fourths are visible at the bottom.)

Since Sam plans to make 7 1 fourth pound hamburgers, I will use the fraction strips to mark off 7 fourths…1 fourth, 2 fourths, 3 fourths, … (Draw each marks to separate the number line into fourths and draw each fraction arrow.)

Now that I have all of the "fourths" represented on the number line, I can verify that there are 7 fourths total.
(Draw slightly larger vertical marks at 0 and 7 fourths above the number line and write = $\frac{7}{4}$ next to the problem.)

Although 7 fourths is an accurate value, it is nicer to simplify answers for others.

I know that 4 fourths is equal to 1 whole. (Draw a vertical mark above the number line at 1 and write $\frac{4}{4}$ below.)

And the fractional part are 3 fourths. (Write = $1\frac{3}{4}$ next to the problem)

It looks like Sam needs 1 and 3 fourths pounds of hamburger meat.

Last, I need to make sure that my answer makes sense.

I found that Sam needs 1 and 3 fourths pounds of hamburger meat to make 7 one-quarter pound hamburgers. It makes sense because I used a fraction template to draw each fractional amount on a number line and to identify and simplify the total.

Name _____ Date _____

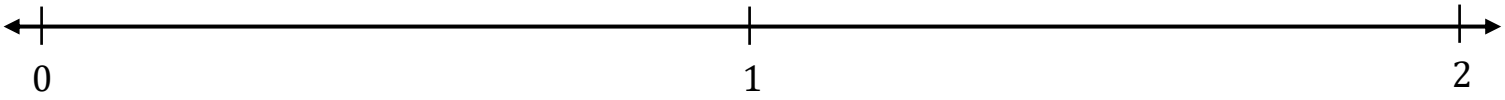
Learning Target: I will multiply a fraction by a whole number

Session 1: Guided Practice (We Do)

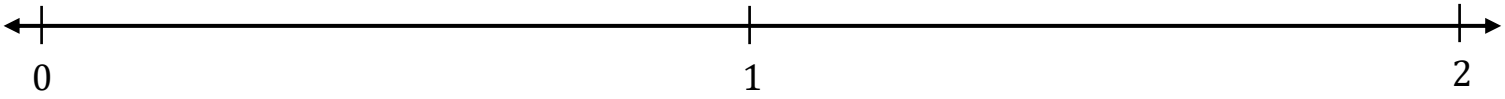
We Do Together: (Teacher Actions)

- Use fraction strips and number lines to multiply fractions by whole numbers.

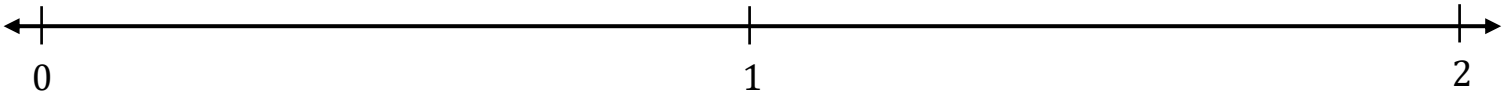
1. $5 \times \frac{1}{3} =$ _____



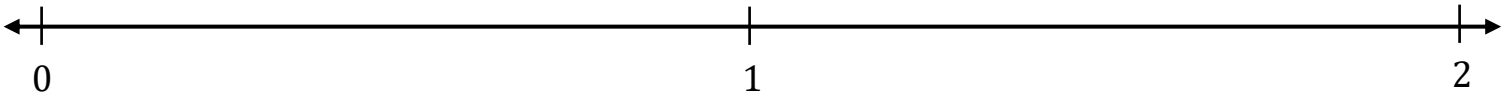
2. $3 \times \frac{2}{4} =$ _____



3. $4 \times \frac{3}{8} =$ _____



4. $3 \times \frac{2}{6} =$ _____



Name _____ Date _____

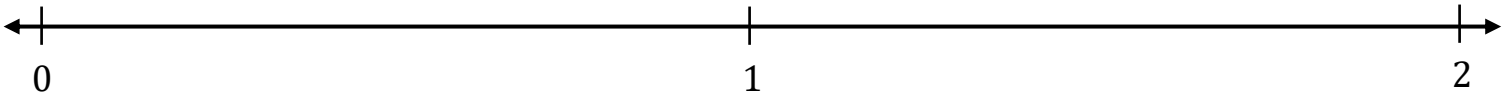
Learning Target: I will multiply a fraction by a whole number

Session 1: Guided Practice (We Do - Continued)

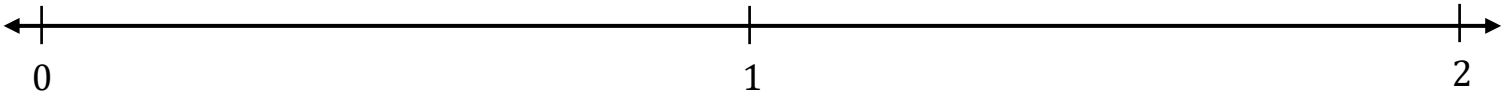
You Do Together: (As a class, or in small groups)

- Students take turns leading using fraction strips and number lines to multiply fractions by whole numbers.

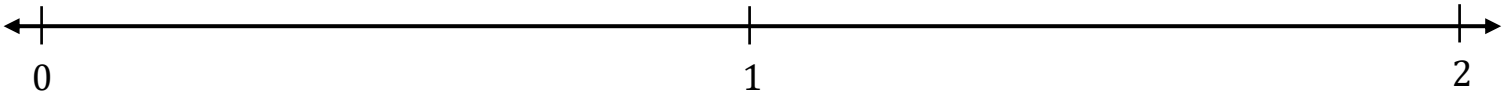
5. $2 \times \frac{3}{4} =$ _____



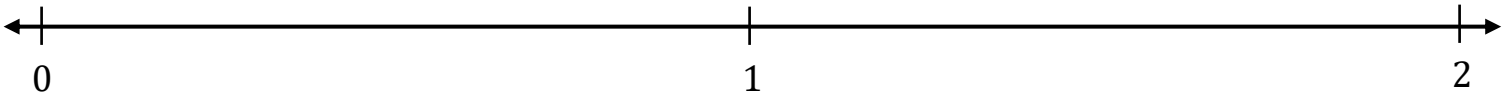
6. $3 \times \frac{1}{2} =$ _____



7. $3 \times \frac{2}{3} =$ _____



8. $7 \times \frac{2}{8} =$ _____



Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

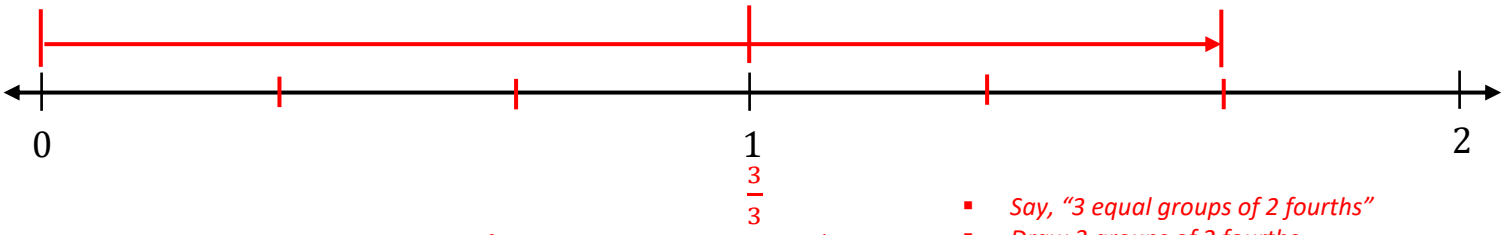
Session 1: Guided Practice (We Do – Teacher Notes)

We Do Together: (Teacher Actions)

- Use fraction strips and number lines to add or subtract.

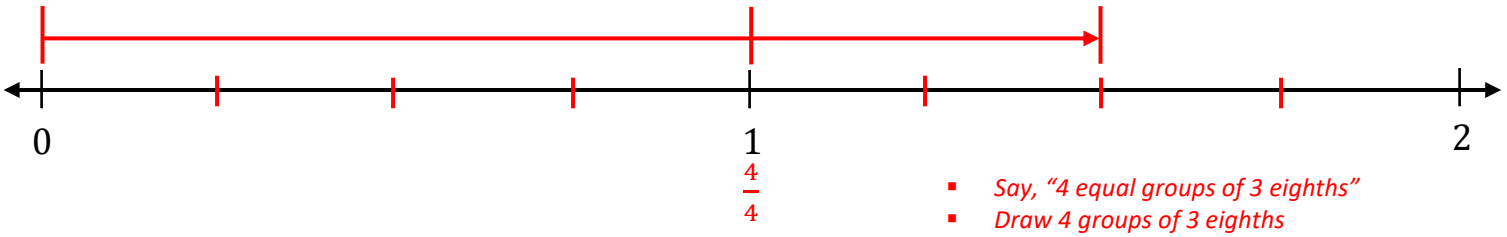
1. $5 \times \frac{1}{3} = \underline{\quad\frac{5}{3}\quad} = 1\frac{2}{3}$

- *Say, "5 equal groups of 1 third"*
- *Draw 5 groups of 1 third*
- *Identify the total*
- *Simplify by grouping 3 of the thirds into*



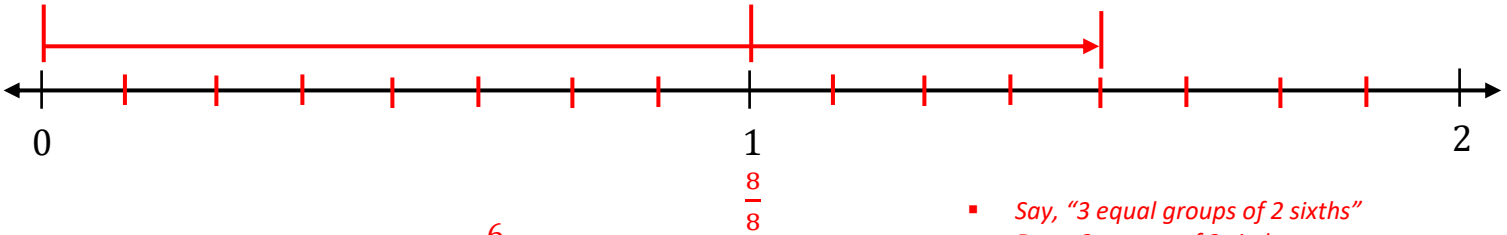
2. $3 \times \frac{2}{4} = \underline{\quad\frac{6}{4}\quad} = 1\frac{2}{4} = 1\frac{1}{2}$

- *Say, "3 equal groups of 2 fourths"*
- *Draw 3 groups of 2 fourths*
- *Identify the total*
- *Simplify by grouping 4 of the fourths into 1 whole*



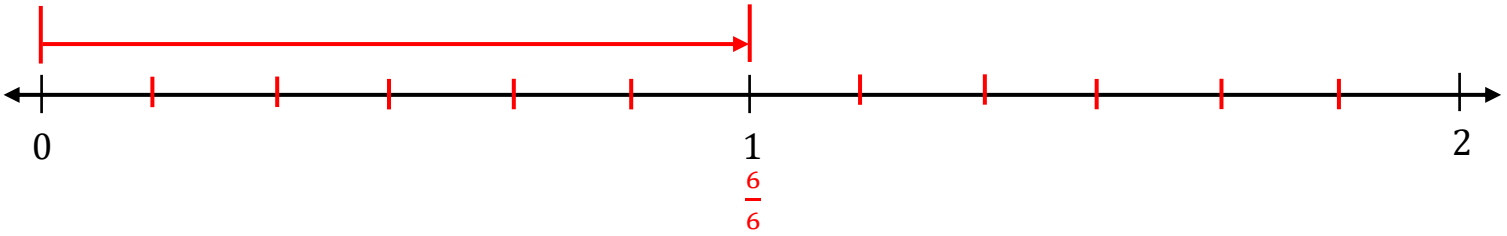
3. $4 \times \frac{3}{8} = \underline{\quad\frac{12}{8}\quad} = 1\frac{4}{8} = 1\frac{1}{2}$

- *Say, "4 equal groups of 3 eighths"*
- *Draw 4 groups of 3 eighths*
- *Identify the total*
- *Simplify by grouping 8 of the eighths into 1 whole*
- *Simplify 1 and 4 eighths to 1 and 1 half*



4. $3 \times \frac{2}{6} = \underline{\quad\frac{6}{6}\quad} = 1$

- *Say, "3 equal groups of 2 sixths"*
- *Draw 3 groups of 2 sixths*
- *Identify the total*
- *Simplify by grouping 6 of the sixths into 1 whole*



Fraction Strips (4 Sets)

Directions: Each student should receive two sets of strips…do not cut into individual strips. (See example on p. 9, *fold the fraction strips twice to show fractional parts of a whole.*)

1 Whole								1 Whole							
$\frac{1}{2}$				$\frac{1}{2}$				$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$		$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$	
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{6}$	$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
1 Whole								1 Whole							
$\frac{1}{2}$				$\frac{1}{2}$				$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$		$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$	
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{6}$	$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

Session 1: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form A

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

1.

$\frac{1}{3}$ x 2 = _____

$\frac{1}{3} + \frac{1}{2}$

$\frac{1}{3} + \frac{1}{3}$

$2 + \frac{1}{3}$

$\frac{1}{3}$ x $\frac{1}{3}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$5 \times \frac{1}{3} =$ _____

3.

$4 \times \frac{5}{7} =$ _____

4.

$\frac{4}{5} \times 2 =$ _____

5.

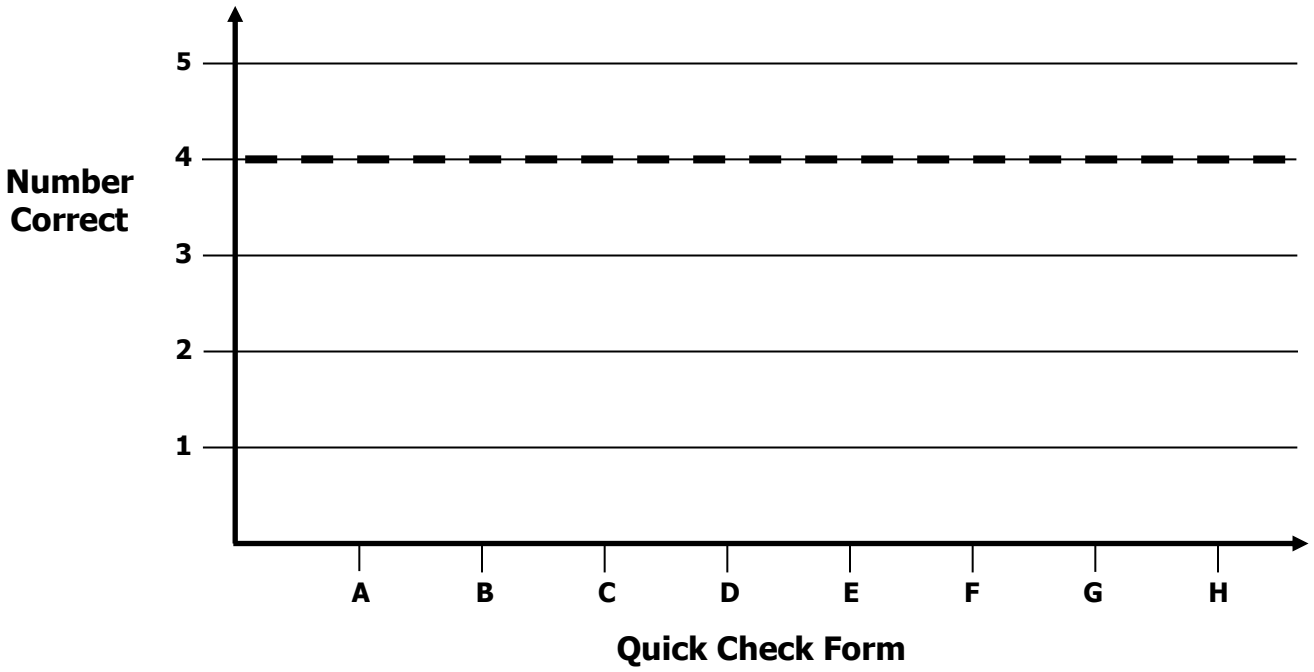
$\frac{3}{4} \times 6 =$ _____

Growth Chart

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Goal: 4 out of 5 correct



Intervention	Date	Score
Session 1:		
Session 2:		
Session 3:		
Session 4:		
Session 5:		
Session 6:		
Session 7:		
Session 8:		

Name _____ Date _____

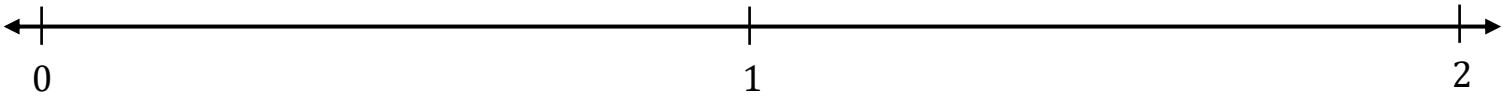
Learning Target: I will multiply a fraction by a whole number

Session 2: Guided Practice (We Do)

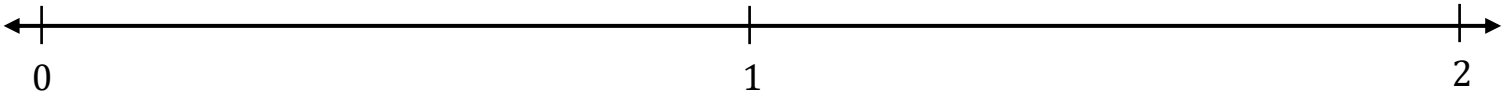
We Do Together: (Teacher Actions)

- Use fraction strips and number lines to multiply fractions by whole numbers.

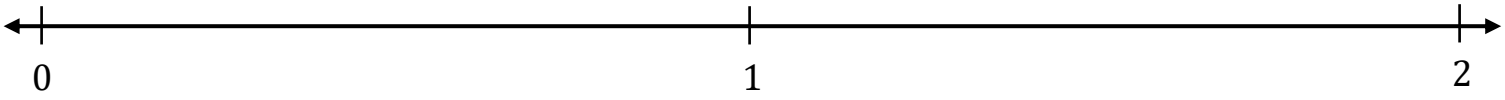
1. $4 \times \frac{1}{3} =$ _____



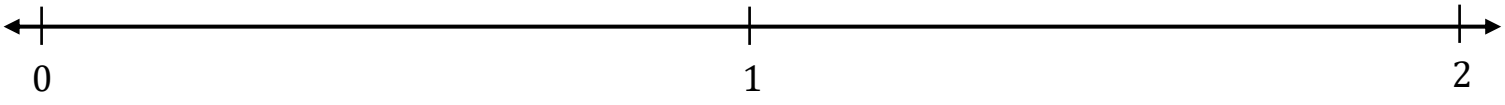
2. $2 \times \frac{3}{4} =$ _____



3. $5 \times \frac{3}{8} =$ _____



4. $4 \times \frac{2}{6} =$ _____



Name _____ Date _____

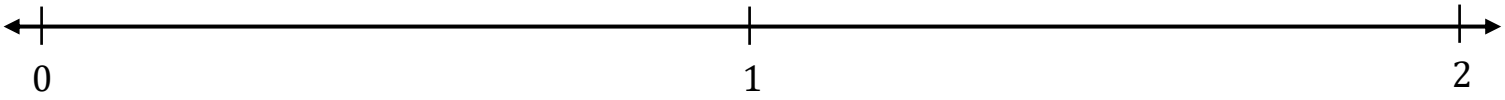
Learning Target: I will multiply a fraction by a whole number

Session 2: Guided Practice (We Do - Continued)

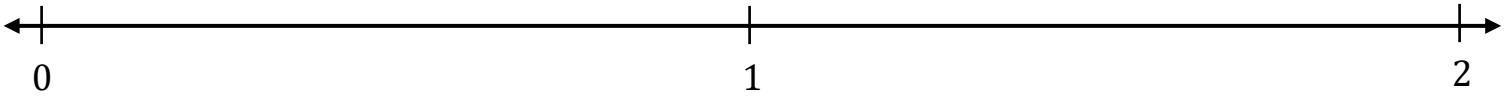
You Do Together: (As a class, or in small groups)

- Students take turns leading using fraction strips and number lines to multiply fractions by whole numbers.

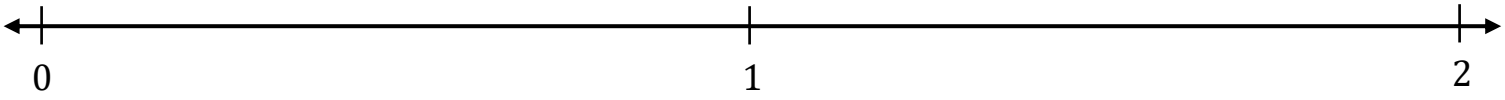
5. $3 \times \frac{2}{4} = \_\_\_\_\_$



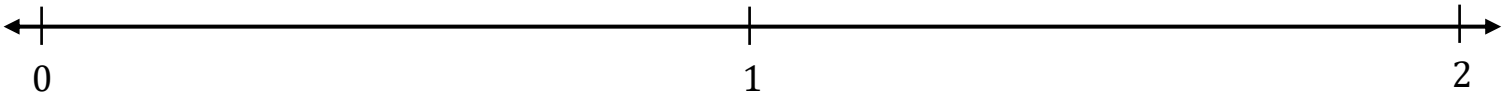
6. $5 \times \frac{1}{3} = \_\_\_\_\_$



7. $2 \times \frac{7}{8} = \_\_\_\_\_$



8. $3 \times \frac{2}{3} = \_\_\_\_\_$



Session 2: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form B

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

$\frac{1}{3}$ x 4 = _____

$\frac{1}{3} + \frac{1}{4}$	$4 + \frac{1}{3}$
$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$	$\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$4 \times \frac{2}{5} =$ _____

3.

$6 \times \frac{3}{4} =$ _____

4.

$\frac{3}{7} \times 4 =$ _____

5.

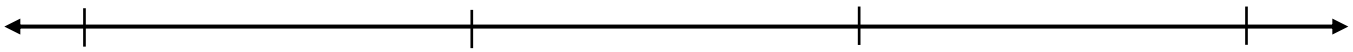
$\frac{1}{4} \times 5 =$ _____

Session 3: Modeling (I Do)

Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

At the end of yesterday's track practice, Crystal ran around the track 10 times to increase her endurance. If one lap around the track is equal to one-fourth of a mile, how many miles did Crystal run around the track?



Session 3: Modeling (I Do – Visual Support)

Learning Target: I will multiply a fraction by a whole number

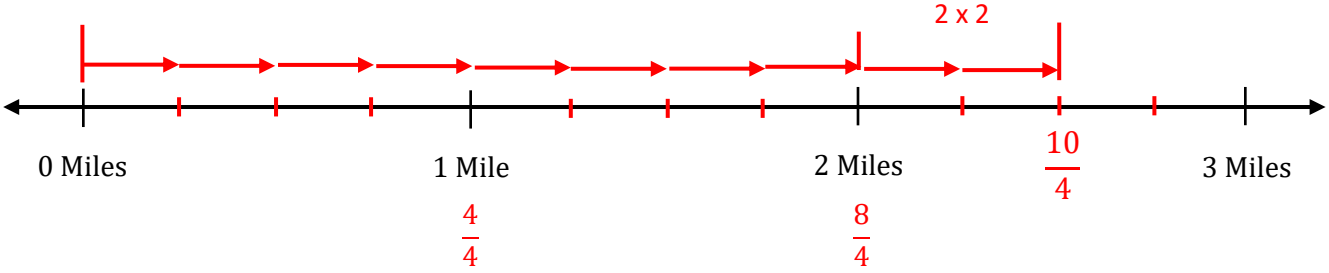
Readiness for multiplying a fraction by a fraction

At the end of yesterday's track practice, Crystal ran around the track 10 times to increase her endurance. If one lap around the track is equal to one-fourth of a mile, how many miles did Crystal run around the track?

$$10 \times \frac{1}{4} = \frac{10}{4} = 2\frac{2}{4} = 2\frac{1}{2}$$

2 x 1

2 x 2



Session 3: Modeling (I Do - Teacher Notes)

Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

At the end of yesterday's track practice, Crystal ran around the track 10 times to increase her endurance. If one lap around the track is equal to one-fourth of a mile, how many miles did Crystal run around the track?

I am going to think aloud to model solving this problem.

Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.

This problem is about Crystal running around a track.

Second, I need to determine what I need to find.

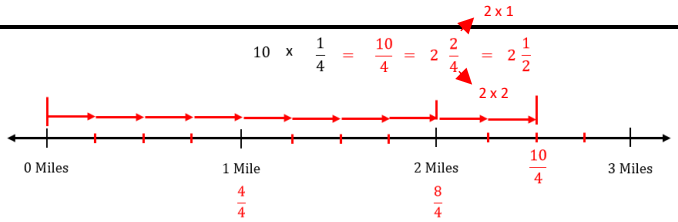
I need to find how many miles she ran at the end of yesterday's practice.

Third, I need to determine what I know.

I know that Crystal ran 1 fourth of a mile time times.

Fourth, I need to figure out what I can try.

I am going to try drawing each fractional part on the number line to find the total.
(Write the multiplication problem above the number line.)



I will begin by drawing 1 fourth of a mile 10 times, but first I need to separate the miles into fourths.
(Separate the each of the whole miles into fourths.)

Now I can begin drawing each arrow that will represent each time around the track.
(Count off and draw each of the 10 arrows…also, write $\frac{4}{4}$ and $\frac{8}{4}$ after drawing the 4th and 8th arrows.)

I see that Crystal ran 10 fourths of a mile.
(Draw a vertical line above the 10 fourths mark on the number line. Then label 10 fourths on the number line and write "= $\frac{10}{4}$" next to the problem above.)

I also know that 10 fourths can be simplified as 2 whole miles and 2 fourths.
(Draw a vertical line above the 4 fourths and 8 fourths mark on the number line. Then label both locations and write "= $2\frac{2}{4}$" next to the problem above.)

Lastly, I see that 2 fourths can be simplified as 1 half…I can show this numerically because the numerator and denominator have a common factor of 2…2 is equal to 2 times 1 and 4 is equal to 2 times 2)
(Write "= $2\frac{1}{2}$" next to the problem above.)

Last, I need to make sure that my answer makes sense.

I found that Crystal ran 2 and 1 half miles at the end of yesterday's practice. It makes sense because I drew each of the 10 laps on a number line to see that 10 fourths is equal to 2 wholes and 1 half.

Name _____ Date _____

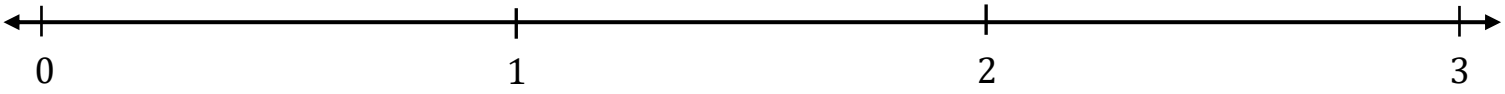
Learning Target: I will multiply a fraction by a whole number

Session 3: Guided Practice (We Do)

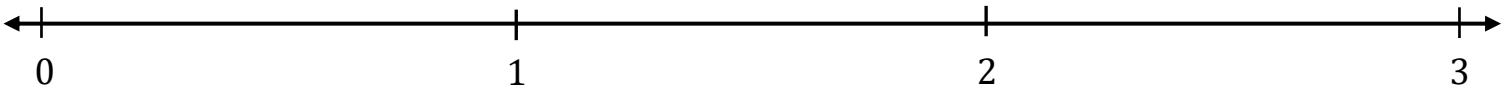
We Do Together: (Teacher Actions)

- Use number lines to multiply fractions by whole numbers.

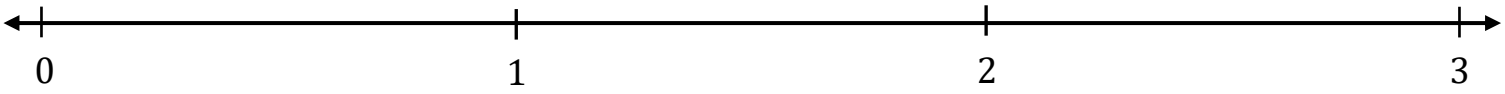
1. $4 \times \frac{2}{3} =$ _____



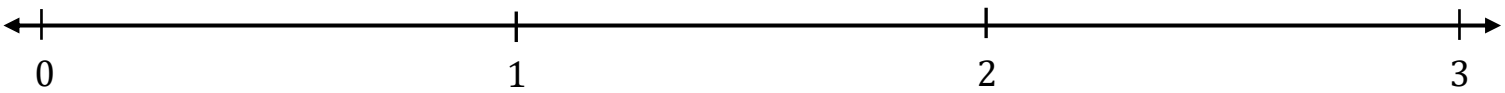
2. $\frac{3}{4} \times 2 =$ _____



3. $6 \times \frac{3}{8} =$ _____



4. $\frac{2}{5} \times 5 =$ _____



Name _____ Date _____

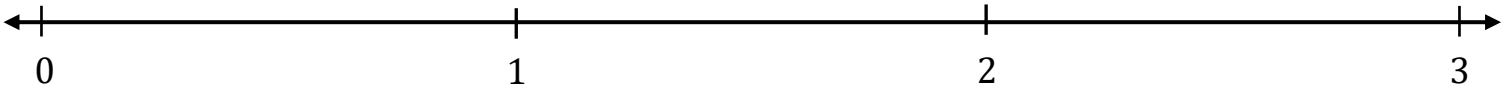
Learning Target: I will multiply a fraction by a whole number

Session 3: Guided Practice (We Do - Continued)

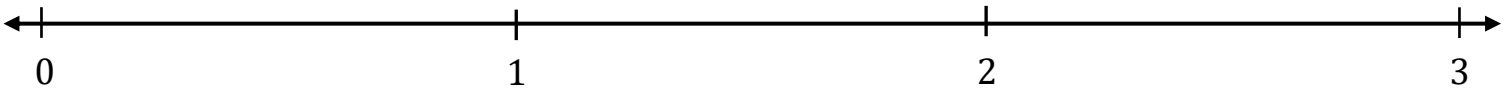
You Do Together: (Teacher Actions)

- Students take turns leading to multiply fractions by whole numbers.

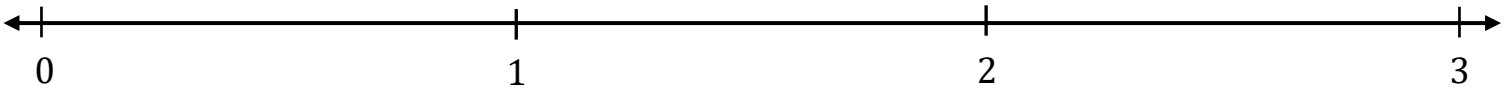
5. $6 \times \frac{2}{4} =$ _____



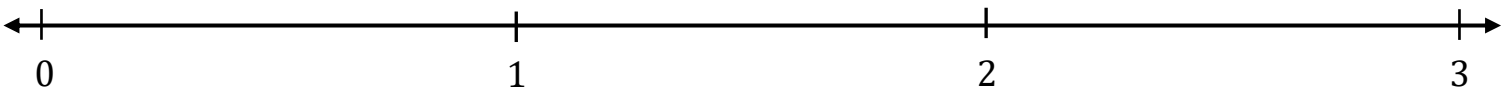
6. $\frac{5}{6} \times 3 =$ _____



7. $4 \times \frac{5}{8} =$ _____



8. $\frac{3}{4} \times 3 =$ _____



Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

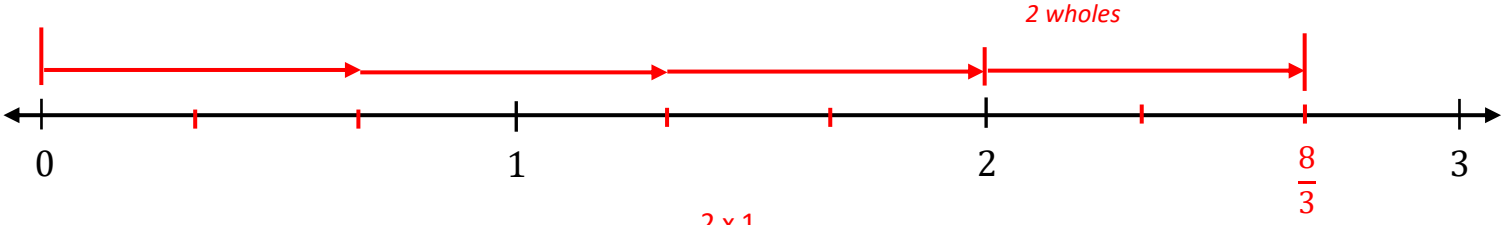
Session 3: Guided Practice (We Do – Teacher Notes)

We Do Together: (Teacher Actions)

- Use number lines to multiply fractions by whole numbers.

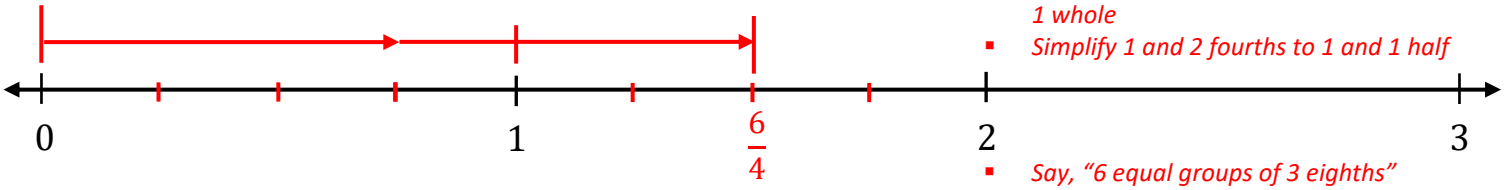
1. $4 \times \frac{2}{3} = \frac{8}{3} = 2\frac{2}{3}$

- *Say, "4 equal groups of 2 thirds"*
- *Draw 4 groups of 2 thirds*
- *Identify the total*
- *Simplify by grouping 6 of the thirds into 2 wholes*



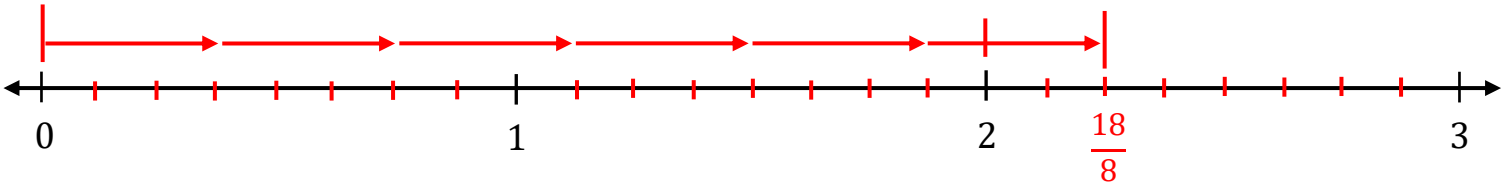
2. $\frac{3}{4} \times 2 = \frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2}$ (2 x 1, 2 x 2)

- *Say, "2 equal groups of 3 fourths"*
- *Draw 2groups of 3 fourths*
- *Identify the total*
- *Simplify by grouping 4 of the fourths into 1 whole*
- *Simplify 1 and 2 fourths to 1 and 1 half*



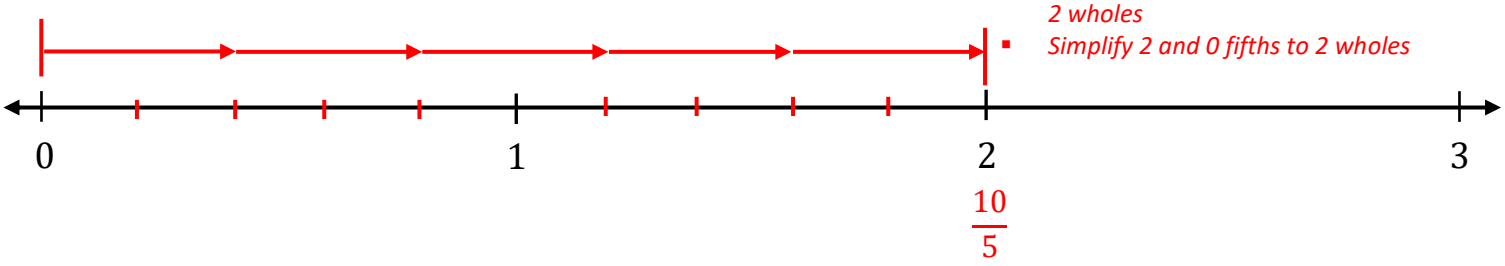
3. $6 \times \frac{3}{8} = \frac{18}{8} = 2\frac{2}{8} = 2\frac{1}{4}$ (2 x 1, 2 x 4)

- *Say, "6 equal groups of 3 eighths"*
- *Draw 6 groups of 3 eighths*
- *Identify the total*
- *Simplify by grouping 16 of the eighths into 2 wholes*
- *Simplify 1 and 2 eighths to 1 and 1 fourth*



4. $\frac{2}{5} \times 5 = \frac{10}{5} = 2\frac{0}{5} = 2$

- *Say, "5 equal groups of 2 fifths"*
- *Draw 5 groups of 2 fifths*
- *Identify the total*
- *Simplify by grouping 10 of the fifths into 2 wholes*
- *Simplify 2 and 0 fifths to 2 wholes*



Session 3: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form C

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

$\frac{1}{4}$ x 3 = _____

$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

$\frac{1}{4} + \frac{1}{3}$

$3 + \frac{1}{4}$

$\frac{1}{4}$ x $\frac{1}{4}$ x $\frac{1}{4}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$2 \times \frac{4}{5} =$ _____

3.

$5 \times \frac{3}{4} =$ _____

4.

$\frac{1}{7} \times 3 =$ _____

5.

$\frac{3}{5} \times 4 =$ _____

Name _____ Date _____

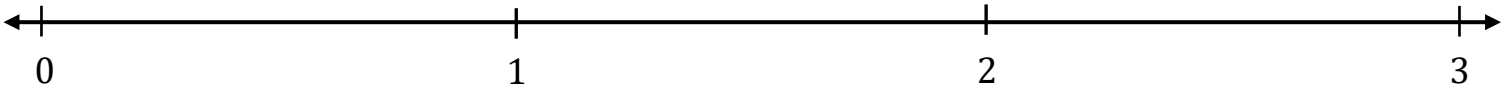
Learning Target: I will multiply a fraction by a whole number

Session 4: Guided Practice (We Do)

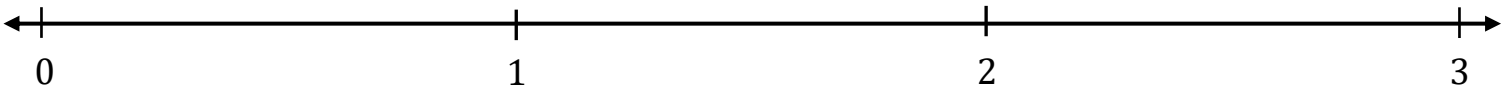
We Do Together: (Teacher Actions)

- Use number lines to multiply fractions by whole numbers.

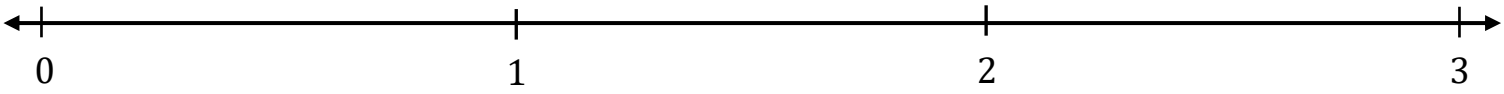
1. $2 \times \frac{3}{4} =$ _____



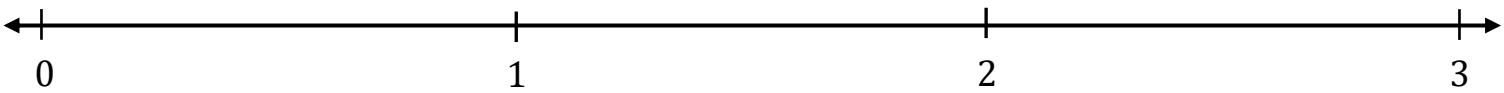
2. $\frac{3}{5} \times 3 =$ _____



3. $5 \times \frac{3}{8} =$ _____



4. $\frac{2}{3} \times 4 =$ _____



Name _____ Date _____

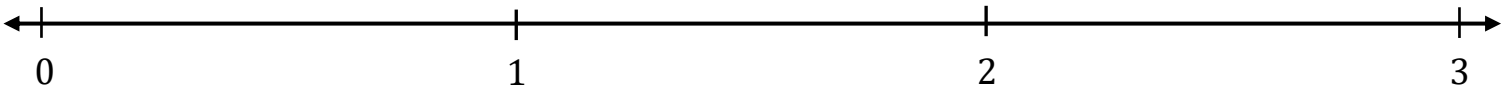
Learning Target: I will multiply a fraction by a whole number

Session 4: Guided Practice (We Do - Continued)

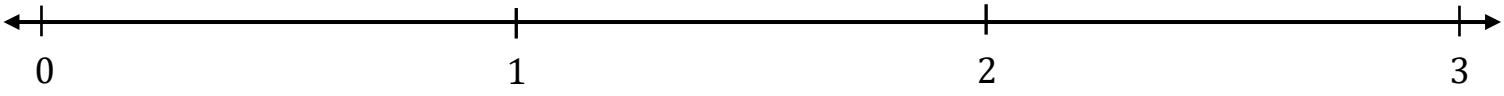
You Do Together: (Teacher Actions)

- Students take turns leading to multiply fractions by whole numbers.

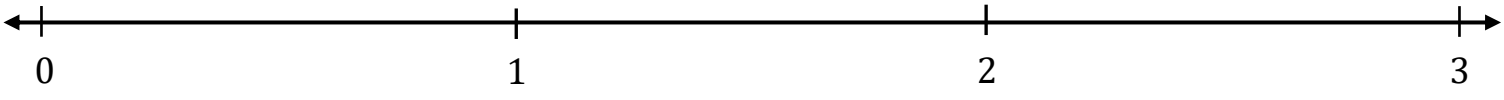
5. $5 \times \frac{2}{4} =$ _____



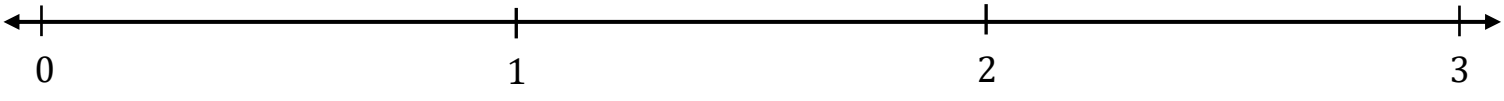
6. $\frac{5}{6} \times 2 =$ _____



7. $4 \times \frac{3}{8} =$ _____



8. $\frac{3}{5} \times 4 =$ _____



Session 4: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form D

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

$\frac{1}{3}$ x 5 = _____

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

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

$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$

$\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$4 \times \frac{2}{5} =$ _____

3.

$6 \times \frac{1}{4} =$ _____

4.

$\frac{3}{7} \times 4 =$ _____

5.

$\frac{3}{4} \times 5 =$ _____

Name _____ Date _____

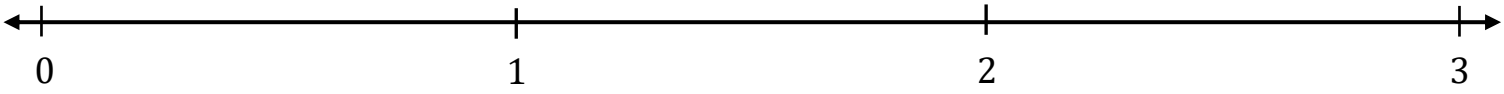
Learning Target: I will multiply a fraction by a whole number

Session 5: Guided Practice (We Do)

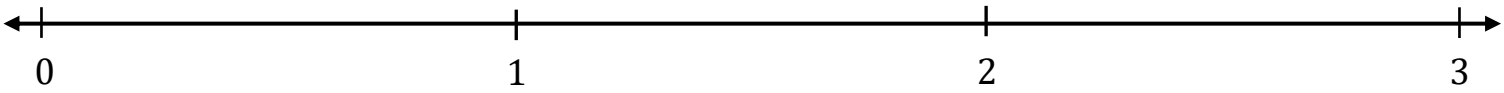
We Do Together: (Teacher Actions)

- Use number lines to multiply fractions by whole numbers.

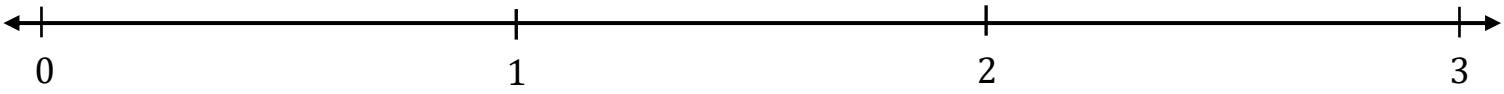
1. $2 \times \frac{5}{6} =$ _____



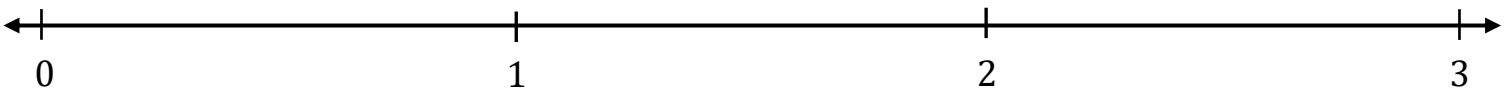
2. $\frac{4}{5} \times 3 =$ _____



3. $5 \times \frac{3}{8} =$ _____



4. $\frac{2}{5} \times 4 =$ _____



Name _____ Date _____

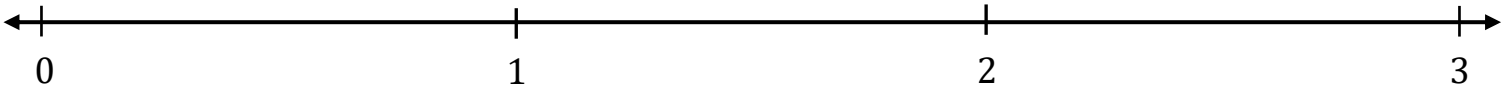
Learning Target: I will multiply a fraction by a whole number

Session 5: Guided Practice (We Do - Continued)

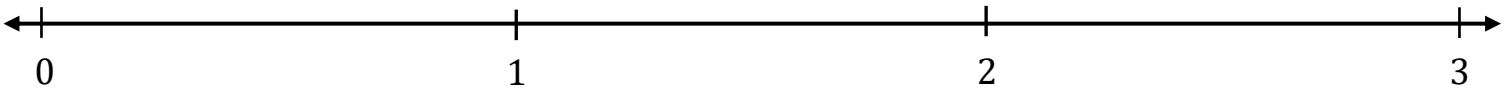
You Do Together: (Teacher Actions)

- Students take turns leading to multiply fractions by whole numbers.

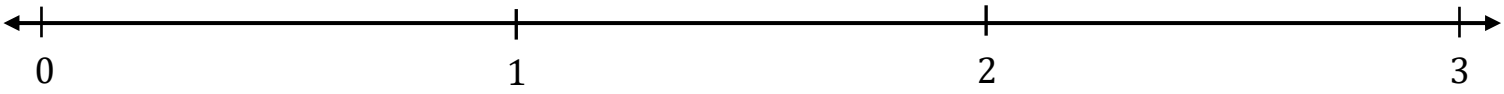
5. $5 \times \frac{2}{4} =$ _____



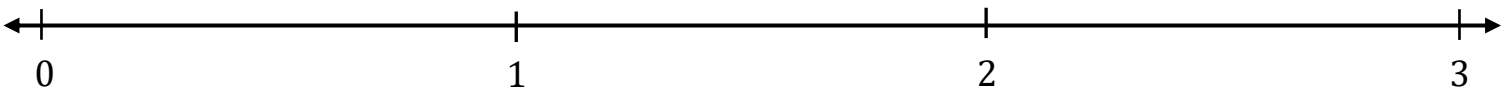
6. $\frac{5}{6} \times 2 =$ _____



7. $3 \times \frac{5}{8} =$ _____



8. $\frac{3}{4} \times 4 =$ _____



Session 5: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form E

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

1.

$\frac{1}{3}$ x 2 = _____

$\frac{1}{3} + \frac{1}{2}$

$\frac{1}{3} + \frac{1}{3}$

$2 + \frac{1}{3}$

$\frac{1}{3}$ x $\frac{1}{3}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$5 \times \frac{1}{3} =$ _____

3.

$4 \times \frac{5}{7} =$ _____

4.

$\frac{4}{5} \times 2 =$ _____

5.

$\frac{3}{4} \times 6 =$ _____

Session 6: Modeling (I Do)

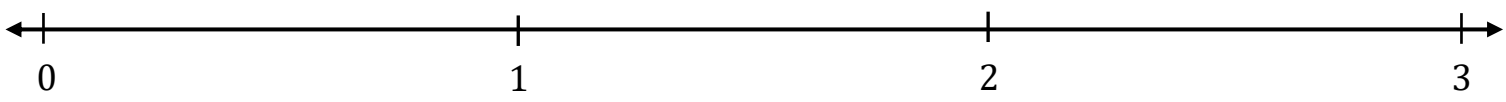
Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

On the Delta Math readiness screener, Donna selected the following answer choice. Is she correct? If not, why do you think she chose her answer?

$\frac{1}{3} \times 4$ is equivalent to which expression?

- ○ $\frac{1}{3} \times \frac{1}{4}$
- ○ $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$
- ○ $4 + \frac{1}{3}$
- ● $\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$



Session 6: Modeling (I Do – Visual Support)

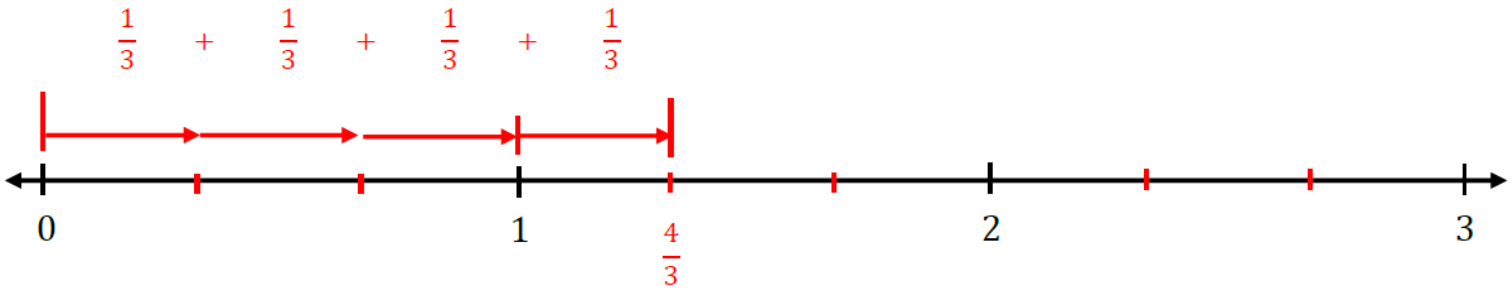
Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

On the Delta Math readiness screener, Donna selected the following answer choice. Is she correct? If not, why do you think she chose her answer?

$\frac{1}{3} \times 4$ is equivalent to which expression?

- ○ $\frac{1}{3} \times \frac{1}{4}$
- ○ $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$
- ○ $4 + \frac{1}{3}$
- ● $\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$



Session 6: **Modeling** (I Do - Teacher Notes)

Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

On the Delta Math readiness screener, Donna selected the following answer choice. Is she correct? If not, why do you think she chose her answer?

I am going to think aloud to model solving this problem.

Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about. **This problem is about Donna answering a problem about multiplication on a Delta Math readiness screener.**
Second, I need to determine what I need to find. **I need to find if Donna chose the correct answer. And if she was not correct, I need to consider why she made the choice that she did.**
Third, I need to determine what I know. **I know that Donna chose 1 third times 1 third times 1 third times 1 third as the answer to 1 third times 4.**
Fourth, I need to figure out what I can try. **I am going to try using my understanding of multiplication to find the correct answer to this question.** **Over the past few days, we have multiplying fractions by whole numbers by drawing equal groups of fractions and adding each group to find the total.** (Reveal the number line near the bottom of the "Modelling" page.) **Since I need to make 4 groups of the fraction 1 third…I will separate each whole into 3 equal parts.** (Draw two dash marks between each whole to make thirds.) **Now, I can draw 4 fraction arrows…each equal to 1 third.** (Draw each arrow above the number line.) **I see that 4 times 1 third is equal to 1 and 1 third.** (Draw vertical lines above at 0 and 4 thirds.) **But, 1 and 1 third is not an answer choice...so I will need to find another equivalent expression.** **Since multiplication is the same as repeated addition, I can write 1 third plus 1 third plus 1 third plus 1 third.** (Write the addition statement above the arrows.) **I see that this is an answer choice, but not the one Donna chose…therefore, she must have been incorrect.** **I think that Donna chose her answer because she saw the fraction 1 third…a multiplication sign…and the number four…and the answer she chose has the fraction 1 third multiplied by itself 4 times.**
Last, I need to make sure that my answer makes sense. **I found that Donna was not correct. It makes sense because I drew the original multiplication problem as repeated addition to find two different equivalent expressions...the value of the total and an equivalent addition statement.**

Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Which answer choice has the same value as the multiplication problem.

1.

$$\frac{1}{5} \times 2 = \_\_\_\_\_$$

- ○ $\frac{1}{5} + \frac{1}{2}$
- ○ $\frac{1}{5} + \frac{1}{5}$
- ○ $2 + \frac{1}{5}$
- ○ $\frac{1}{5} \times \frac{1}{5}$

- Use your understanding of multiplication as repeated addition to complete each multiplication problem.

2.

$$5 \times \frac{2}{3} = \_\_\_\_\_$$

3.

$$4 \times \frac{3}{7} = \_\_\_\_\_$$

4.

$$\frac{2}{5} \times 3 = \_\_\_\_\_$$

5.

$$\frac{3}{4} \times 2 = \_\_\_\_\_$$

Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Session 6: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)

- Students take turns leading to answer each problem using their understanding of multiplication.
- Which answer choice has the same value as the multiplication problem.

6.

$\frac{1}{7}$ x 3 = _____

- ○ $\frac{1}{7} + \frac{1}{3}$
- ○ $\frac{1}{7} + \frac{1}{7} + \frac{1}{7}$
- ○ $3 + \frac{1}{7}$
- ○ $\frac{1}{7}$ x $\frac{1}{7}$ x $\frac{1}{7}$

- Use your understanding of multiplication as repeated addition to complete each multiplication problem.

7.

$4 \times \frac{1}{3} =$ _____

8.

$3 \times \frac{5}{6} =$ _____

9.

$\frac{3}{5}$ x 2 = _____

10.

$\frac{2}{7}$ x 5 = _____

Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Session 6: Guided Practice (We Do – Teacher Notes)

We Do Together: (Teacher Actions)

- Which answer choice has the same value as the multiplication problem.

1.

$\frac{1}{5} \times 2 =$ _____

- ● $\frac{1}{5} + \frac{1}{5}$
- ○ $\frac{1}{5} + \frac{1}{2}$
- ○ $2 + \frac{1}{5}$
- ○ $\frac{1}{5} \times \frac{1}{5}$

- *I need to find an equal expression to 1 fifth times 2*
- *I know that 1 fifth times 2 is equal to 2 equal groups of 1 fifth"*
- *I can find the total of 2 equal groups by adding each group together*
- *1 fifth plus 1 fifth is the only correct answer choice*
- *It makes sense because multiplying by a whole number can always be represented by repeated addition*

- Use your understanding of multiplication as repeated addition to complete each multiplication problem.

2.

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

$\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} = \frac{10}{3} = 3\frac{1}{3}$

3.

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

$\frac{3}{7} + \frac{3}{7} + \frac{3}{7} + \frac{3}{7} = \frac{12}{7} = 1\frac{5}{7}$

4.

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

$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} = \frac{6}{5} = 1\frac{1}{5}$

5.

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

$\frac{3}{4} + \frac{3}{4} = \frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2}$ (2 x 1, 2 x 2)

Session 6: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form F

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

$\frac{1}{3}$ x 4 = _____

$\frac{1}{3} + \frac{1}{4}$	$4 + \frac{1}{3}$
$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$	$\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$4 \times \frac{2}{5} =$ _____

3.

$6 \times \frac{3}{4} =$ _____

4.

$\frac{3}{7} \times 4 =$ _____

5.

$\frac{1}{4} \times 5 =$ _____

Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Session 7: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Which answer choice has the same value as the multiplication problem.

1.

$$\frac{1}{7} \times 2 = \_\_\_\_\_$$

- ○ $\frac{1}{7} + \frac{1}{2}$
- ○ $\frac{1}{7} + \frac{1}{7}$
- ○ $2 + \frac{1}{7}$
- ○ $\frac{1}{7} \times \frac{1}{7}$

- Use your understanding of multiplication as repeated addition to complete each multiplication problem.

2.

$$4 \times \frac{2}{3} = \_\_\_\_\_$$

3.

$$5 \times \frac{3}{7} = \_\_\_\_\_$$

4.

$$\frac{4}{5} \times 3 = \_\_\_\_\_$$

5.

$$\frac{7}{8} \times 2 = \_\_\_\_\_$$

Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Session 7: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)

- Students take turns leading to answer each problem using their understanding of multiplication.
- Which answer choice has the same value as the multiplication problem.

6.

$$\frac{1}{4} \times 3 = \_\_\_\_\_$$

- ○ $\frac{1}{4} + \frac{1}{3}$
- ○ $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$
- ○ $3 + \frac{1}{4}$
- ○ $\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$

- Use your understanding of multiplication as repeated addition to complete each multiplication problem.

7.

$$5 \times \frac{1}{3} = \_\_\_\_\_$$

8.

$$4 \times \frac{5}{6} = \_\_\_\_\_$$

9.

$$\frac{3}{5} \times 6 = \_\_\_\_\_$$

10.

$$\frac{4}{7} \times 5 = \_\_\_\_\_$$

Session 7: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form G

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

$\frac{1}{4}$ x 3 = _____

$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

$\frac{1}{4} + \frac{1}{3}$

$3 + \frac{1}{4}$

$\frac{1}{4}$ x $\frac{1}{4}$ x $\frac{1}{4}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$2 \times \frac{4}{5} =$ _____

3.

$5 \times \frac{3}{4} =$ _____

4.

$\frac{1}{7} \times 3 =$ _____

5.

$\frac{3}{5} \times 4 =$ _____

Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Session 8: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Which answer choice has the same value as the multiplication problem.

1.

$$\frac{1}{5} \times 4 = \_\_\_\_\_$$

- ○ $\frac{1}{5} + \frac{1}{4}$
- ○ $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$
- ○ $4 + \frac{1}{5}$
- ○ $\frac{1}{5} \times \frac{1}{5} \times \frac{1}{5} \times \frac{1}{5}$

- Use your understanding of multiplication as repeated addition to complete each multiplication problem.

2.

$$5 \times \frac{2}{9} = \_\_\_\_\_$$

3.

$$4 \times \frac{3}{5} = \_\_\_\_\_$$

4.

$$\frac{2}{3} \times 6 = \_\_\_\_\_$$

5.

$$\frac{5}{7} \times 3 = \_\_\_\_\_$$

Name _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Session 8: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)

- Students take turns leading to answer each problem using their understanding of multiplication.
- Which answer choice has the same value as the multiplication problem.

6.

$\frac{1}{7}$ x 2 = _____

- ○ $\frac{1}{7} + \frac{1}{2}$
- ○ $\frac{1}{7} + \frac{1}{7}$
- ○ $2 + \frac{1}{7}$
- ○ $\frac{1}{7}$ x $\frac{1}{7}$

- Use your understanding of multiplication as repeated addition to complete each multiplication problem.

7.

$4 \times \frac{2}{3} =$ _____

8.

$2 \times \frac{5}{6} =$ _____

9.

$\frac{4}{5} \times 5 =$ _____

10.

$\frac{6}{7} \times 4 =$ _____

Session 8: Self-Reflection

Learning Target: I will multiply a fraction by a whole number

Briefly discuss student responses:

- What did I learn today about multiplying a fraction by a whole number?

- How confident do I feel about multiplying a fraction by a whole number on my own?
  (Thumbs up, down, or sideways)

Quick Check - Form H

Name_____ Date_____

Learning Target: I will multiply a whole number by a fraction.

Directions: Which answer choice has the same value as the multiplication problem.
(Work time: 30 seconds)

$\frac{1}{3}$ x 5 = _____

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

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

$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$

$\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$ x $\frac{1}{3}$

Directions: Multiply each whole number and fraction. (Work time: 3 minutes)

2.

$4 \times \frac{2}{5} =$ _____

3.

$6 \times \frac{1}{4} =$ _____

4.

$\frac{3}{7} \times 4 =$ _____

5.

$\frac{3}{4} \times 5 =$ _____

Independent Practice (You Do)

Learning Target: I will multiply a fraction by a whole number

Readiness for multiplying a fraction by a fraction

Title of Game: Play "**Multiplication Match-up**!"

Number of Players: 2

Objective: To match your answer cards to unknown problem cards.

Materials:

- 1 set of **Problem** and **Answer** cards per group
- 1 recording sheet per player

Set-up:

- Deal all 10 **Problem** cards face down in a row.
- Deal 5 **Answer** cards face up to each player.

Directions:

- **Player 1** goes first
  - Take a card from the row of face down **Problem** cards and turn it face up
  - Write the problem on the recording sheet
  - And, find the answer in simplest form
- If **Player 1** has the **Answer** card, place it face up on top of the **Problem** card, take both cards and say:

  "The answer to ___ is equal to ___."

- If **Player 1** does not have the answer to the **Problem** card, turn the **Problem** card back over.

- **Players 1 and 2** alternate turns. The **winner** is the first player to match all 5 of their cards.

Names _____ Date _____

Learning Target: I will multiply a fraction by a whole number

Independent Practice: Multiplication Match-up!

(Recording Sheet)

Problem Cards (Set A_1 and A_2)

Storage Suggestions: Copy the **Problem (Set A)** cards and **Answer (Set A)** cards in two different colors. Store 1 set of each in a sealable bag for each pair of students.

Set A_1	$2 \times \frac{1}{4}$ Set A_1	$3 \times \frac{2}{5}$ Set A_1	$4 \times \frac{3}{4}$ Set A_1	$5 \times \frac{2}{3}$ Set A_1
	Set A_1	$\frac{2}{5} \times 4$ Set A_1	$\frac{3}{4} \times 5$ Set A_1	$\frac{2}{3} \times 6$ Set A_1
	Set A_1	$4 \times \frac{1}{6}$ Set A_1	$5 \times \frac{2}{5}$ Set A_1	$6 \times \frac{3}{4}$ Set A_1
Set A_2	$2 \times \frac{1}{4}$ Set A_2	$3 \times \frac{2}{5}$ Set A_2	$4 \times \frac{3}{4}$ Set A_2	$5 \times \frac{2}{3}$ Set A_2
	Set A_2	$\frac{2}{5} \times 4$ Set A_2	$\frac{3}{4} \times 5$ Set A_2	$\frac{2}{3} \times 6$ Set A_2
	Set A_2	$4 \times \frac{1}{6}$ Set A_2	$5 \times \frac{2}{5}$ Set A_2	$6 \times \frac{3}{4}$ Set A_2

Answer Cards (Set A_1 and A_2)

Storage Suggestions: Copy the **Problem (Set A)** cards and **Answer (Set A)** cards in two different colors. Store 1 set of each in a sealable bag for each pair of students.

Set A_1	$\frac{1}{2}$ Set A_1	Set A_1	2 Set A_1	3 Set A_1
	$1\frac{1}{5}$ Set A_1	$1\frac{3}{5}$ Set A_1	Set A_1	4 Set A_1
	$3\frac{1}{3}$ Set A_1	$3\frac{3}{4}$ Set A_1	$\frac{2}{3}$ Set A_1	$4\frac{1}{2}$ Set A_1
Set A_2	$\frac{1}{2}$ Set A_2	Set A_2	2 Set A_2	3 Set A_2
	$1\frac{1}{5}$ Set A_2	$1\frac{3}{5}$ Set A_2	Set A_2	4 Set A_2
	$3\frac{1}{3}$ Set A_2	$3\frac{3}{4}$ Set A_2	$\frac{2}{3}$ Set A_2	$4\frac{1}{2}$ Set A_2

Problem Cards (Set B_1 and B_2)

Storage Suggestions: Copy the **Problem (Set B)** cards and **Answer (Set B)** cards in two different colors. Store 1 set of each in a sealable bag for each pair of students.

Set B_1	$5 \times \frac{1}{4}$ Set B_1	$6 \times \frac{2}{5}$ Set B_1	$7 \times \frac{3}{4}$ Set B_1	$8 \times \frac{2}{3}$ Set B_1
	$\frac{1}{4} \times 8$ Set B_1	$\frac{2}{5} \times 9$ Set B_1	$\frac{3}{4} \times 8$ Set B_1	$\frac{1}{3} \times 9$ Set B_1
	$9 \times \frac{1}{5}$ Set B_1	$8 \times \frac{1}{6}$ Set B_1	Set B_1	Set B_1
Set B_2	$5 \times \frac{1}{4}$ Set B_2	$6 \times \frac{2}{5}$ Set B_2	$7 \times \frac{3}{4}$ Set B_2	$8 \times \frac{2}{3}$ Set B_2
	$\frac{1}{4} \times 8$ Set B_2	$\frac{2}{5} \times 9$ Set B_2	$\frac{3}{4} \times 8$ Set B_2	$\frac{1}{3} \times 9$ Set B_2
	$9 \times \frac{1}{5}$ Set B_2	$8 \times \frac{1}{6}$ Set B_2	Set B_2	Set B_2

Answer Cards (Set B_1 and B_2)

Storage Suggestions: Copy the **Problem (Set B)** cards and **Answer (Set B)** cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.

Set B_1	$1\frac{1}{4}$ Set B_1	$2\frac{2}{5}$ Set B_1	$5\frac{1}{4}$ Set B_1	$5\frac{1}{3}$ Set B_1
	$3\frac{3}{5}$ Set B_1	2 Set B_1	6 Set B_1	3 Set B_1
	$1\frac{4}{5}$ Set B_1	$1\frac{1}{3}$ Set B_1	Set B_1	Set B_1
Set B_2	$1\frac{1}{4}$ Set B_2	$2\frac{2}{5}$ Set B_2	$5\frac{1}{4}$ Set B_2	$5\frac{1}{3}$ Set B_2
	$3\frac{3}{5}$ Set B_2	2 Set B_2	6 Set B_2	3 Set B_2
	$1\frac{4}{5}$ Set B_2	$1\frac{1}{3}$ Set B_2	Set B_2	Set B_2

Questions for Solving Word Problems

Q_1 ***What is the problem about?***
Q_2 ***What do I need to find?***
Q_3 ***What do I know?***
Q_4 ***What can I try?***
Q_5 ***Does my answer make sense?***

Steps for Solving Word Problems

Q_1. *What is the problem about?*
Q_2. *What do I need to find?*
Q_3. *What do I know?*
Q_4. *What can I try?*
Q_5. *Does my answer make sense?*