Tier 3
Intervention Lessons

6.NS.1

Learning Target: I will multiply and divide fractions

Readiness for 6.EE.7: Solve 1-step algebraic equations

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Tier 3 Intervention Planning Guide

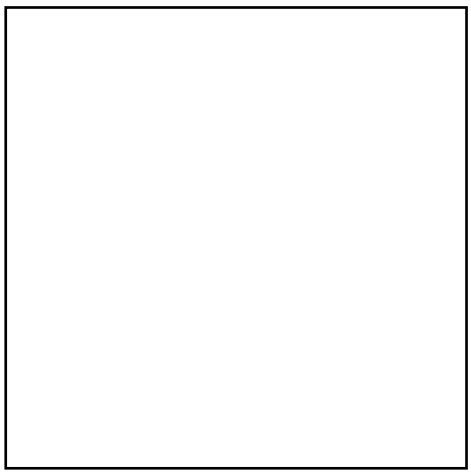
Learning Target: I will multiply and divide fractions **Readiness** for solving 1-step algebraic equations

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:** Draw to see the differences between dividing and multiplying fractions. **Sessions 3, 4 and 5:** Use drawings to understand using common denominators to divide fractions **Sessions 6, 7 and 8:** Use common denominators and "multiply by the reciprocal" to divide fractions
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 and dividing fractions? o How confident do I feel about multiplying and dividing fractions 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 and divide fractions **Readiness** for solving 1-step algebraic equations

Last night, Andy's family ate three fourths of a square pizza for dinner. If each piece was equal to one-eighth of the whole pizza, how many servings of the pizza were eaten?



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

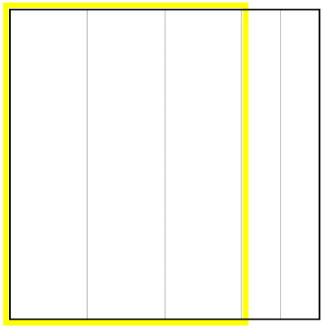
Learning Target: I will multiply and divide fractions

Readiness for solving 1-step algebraic equations

Last night, Andy's family ate three fourths of a square pizza for dinner. If each piece was equal to one-eighth of the whole pizza, how many servings of the pizza were eaten?

Draw 3 fourths of the whole

1 Whole Pizza

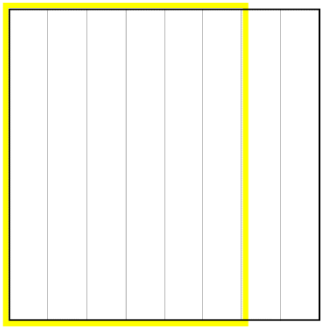


$\frac{3}{4}$ *of the whole*

$\frac{3}{4} \div \frac{1}{8} =$

Separate the whole into eighths

1 Whole Pizza

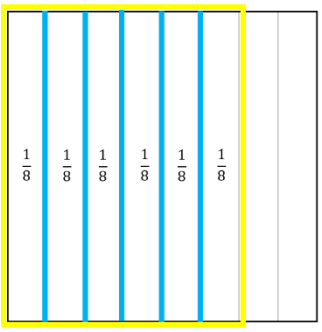


$\frac{3}{4}$ *of the whole*

$\frac{3}{4} \div \frac{1}{8} =$

Find how many eighths are in 3 fourths

1 Whole Pizza



$\frac{3}{4}$ *of the whole*

$\frac{3}{4} \div \frac{1}{8} = 6$

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

Learning Target: I will multiply and divide fractions **Readiness** for solving 1-step algebraic equations

Last night, Andy's family ate three fourths of a square pizza for dinner. If each piece was equal to one-eighth of the whole pizza, how many servings of the pizza were eaten?

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 Andy's family eating a square pizza for dinner.

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

I need to find how many servings of pizza were eaten.

Third, I need to determine what I know.

I know that Andy's family ate 3 fourths of the pizza and each serving size is equal to 1 eighth of the whole.

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

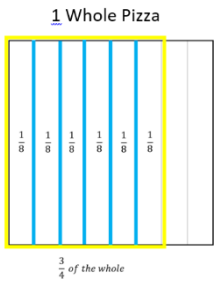
I am going to try drawing how much pizza they ate and each serving size on a square representing the whole pizza. (Label the square and write the division problem.)

I will begin by highlighting 3 fourths of the pizza that was eaten.
(Use the guide for drawing fractions and draw lines separating the fourths
Then, outline three of the fourths using a yellow highlighter and label them.)

Now I will separate the pizza into serving sizes equal to 1 eighth by slicing each fourth in half using vertical lines.
(Use the guide for drawing fractions and draw lines with a blue highlighter to slice the fourths into eighths.)

I see that 3 fourths is equal to 6 eighths which is equal to 6 servings.
(Point to each section and write $\frac{1}{8}$ inside each.)

It looks like 6 servings of pizza were eaten.



$\frac{3}{4} \div \frac{1}{8} = 6$

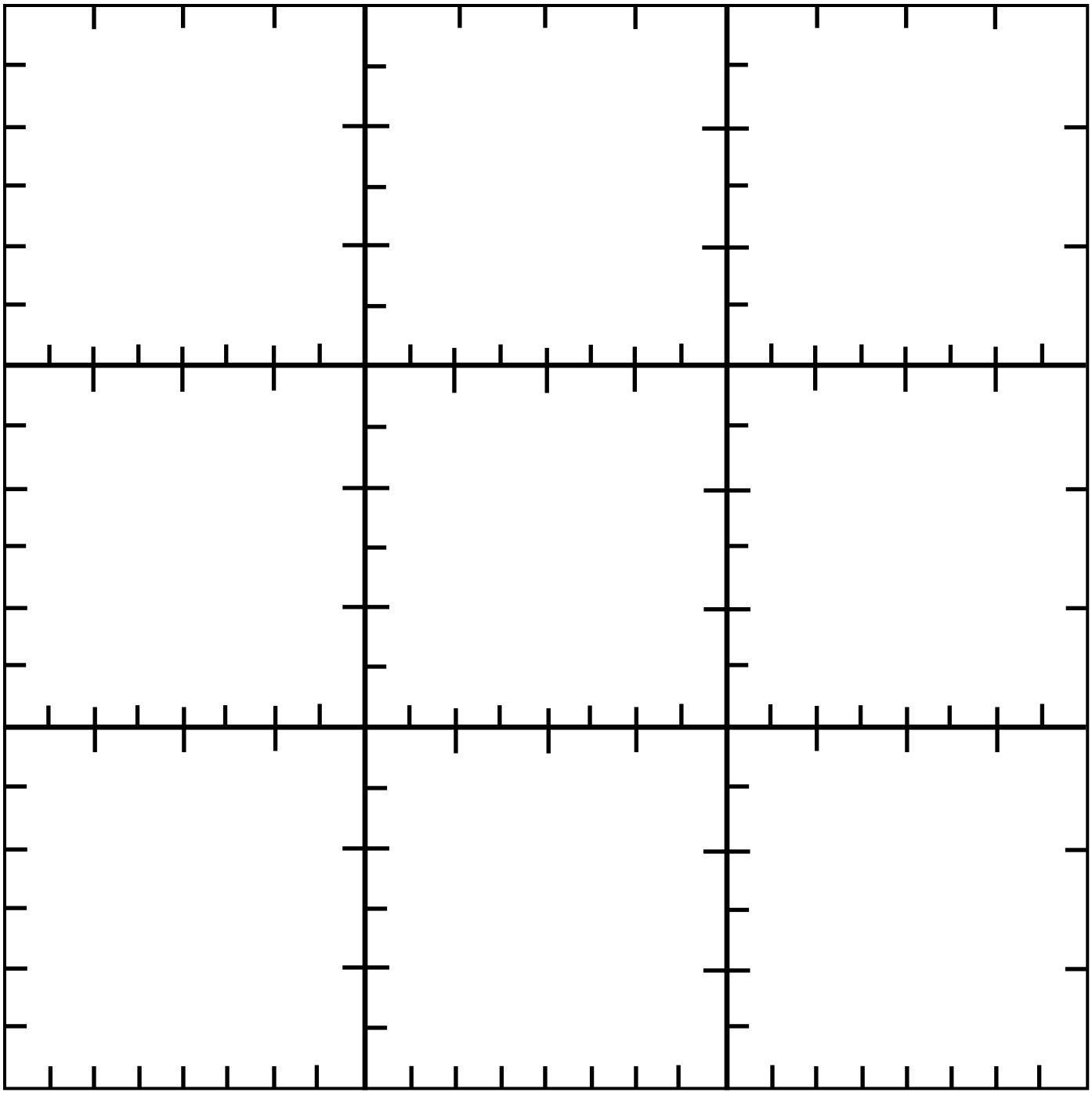
Last, I need to make sure that my answer makes sense.

I found that Andy's family ate 6 servings of pizza. It makes sense because I showed 3 fourths of the square pizza that they ate. Then, I drew eighths of the whole to see how many eighths were equal to 3 fourths.

Guides for Drawing Fractions

Directions: Copy on cardstock and cut out 1 square per student.

Note: The sides of each square provide a guide to draw thirds, fourths, sixths and eighths. Rotate the square to use the side required for each problem.



Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 1: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Restate each problem based on your conceptual understanding.
  Problem 1: How many groups of 1 fourth are in 1 half?
  Problem 2: 1 half of 1 fourth is equal to what part of the whole?
- Use the square guide to help you draw the fractions given in each problem.

1. $\frac{1}{2} \div \frac{1}{4} =$ _____

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

3. $\frac{3}{4} \div \frac{2}{8} =$ _____

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

Name _____ Date _____

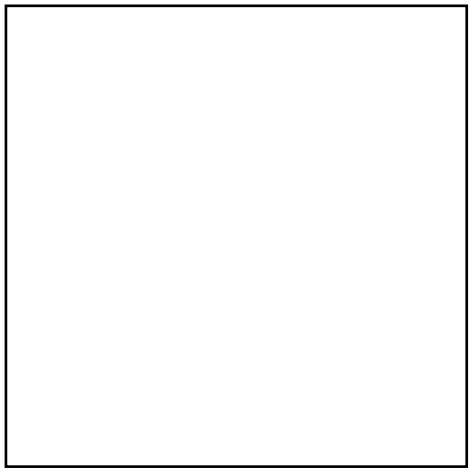
Learning Target: I will multiply and divide fractions

Session 1: Guided Practice (We Do Continued)

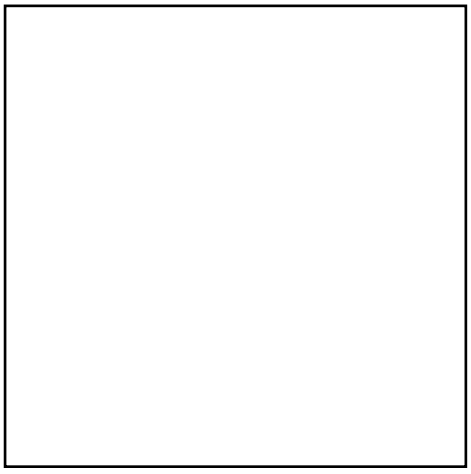
You Do Together: (As a class, or in small groups)

- Take turns restating each problem.
- Use the square guide to help you draw the fractions given in each problem.

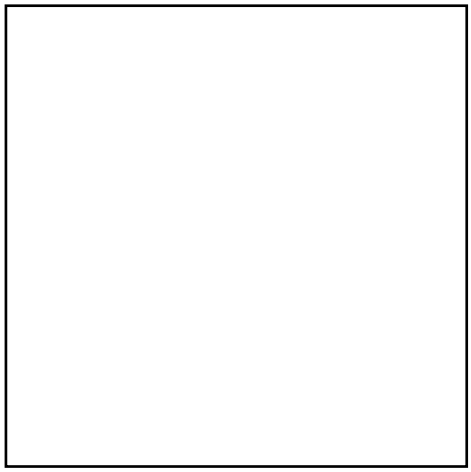
5. $\frac{1}{2} \div \frac{1}{6} =$ _____



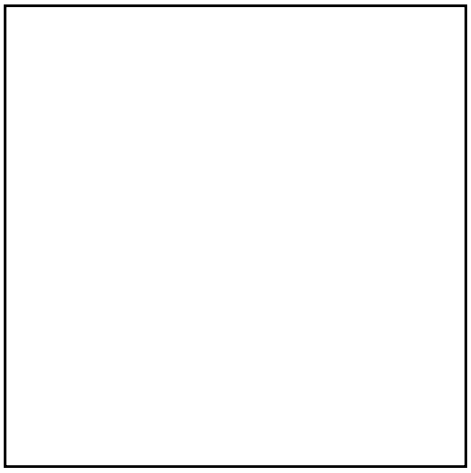
6. $\frac{1}{2} \times \frac{1}{6} =$ _____



7. $\frac{2}{3} \div \frac{2}{6} =$ _____



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



Name _____ Date _____

Learning Target: I will multiply and divide fractions

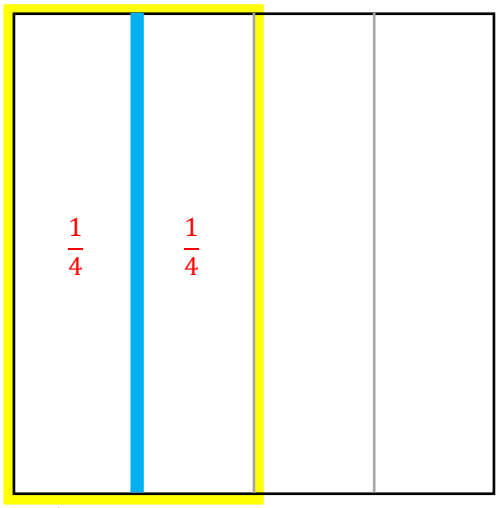
Session 1: Guided Practice (We Do – Teacher Notes)

We Do Together: (Teacher Actions)

- Restate each problem based on your conceptual understanding.
  - *Problem 1: How many groups of 1 fourth are in 1 half?*
  - *Problem 2: 1 half of 1 fourth is equal to what part of the whole?*
- Use the square guide to help you draw the fractions given in each problem.

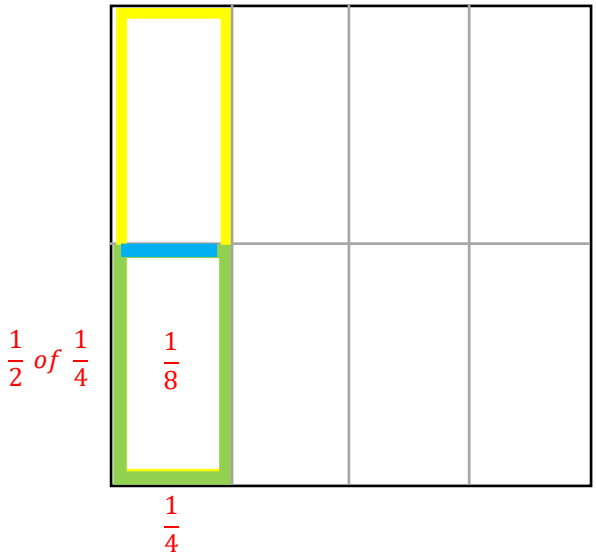
How many groups of 1 fourth are in 1 half?

1. $\frac{1}{2} \div \frac{1}{4} = \underline{2}$



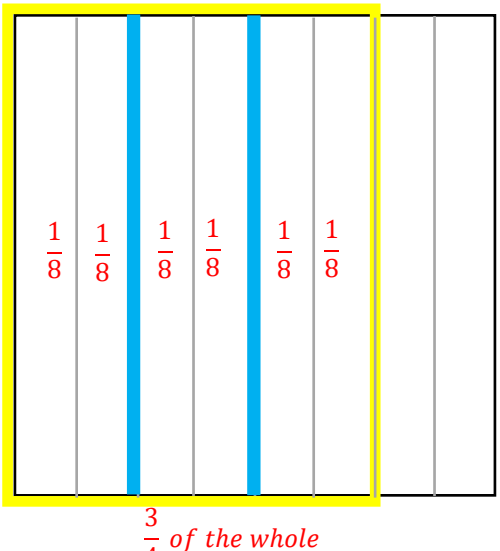
1 half of 1 fourth is 1 eighth of the whole

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



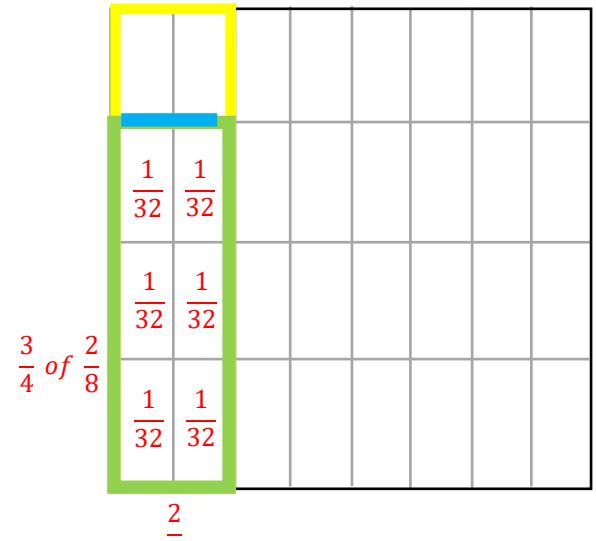
How many groups of 2 eighths are in 3 fourths?

3. $\frac{3}{4} \div \frac{2}{8} = \underline{3}$



3 fourths of 2 eighths is 3 sixteenths of the whole

4. $\frac{3}{4} \times \frac{2}{8} = \underline{\frac{6}{32} = \frac{3}{16}}$ (2 x 3 / 2 x 16)



Session 1: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form A

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

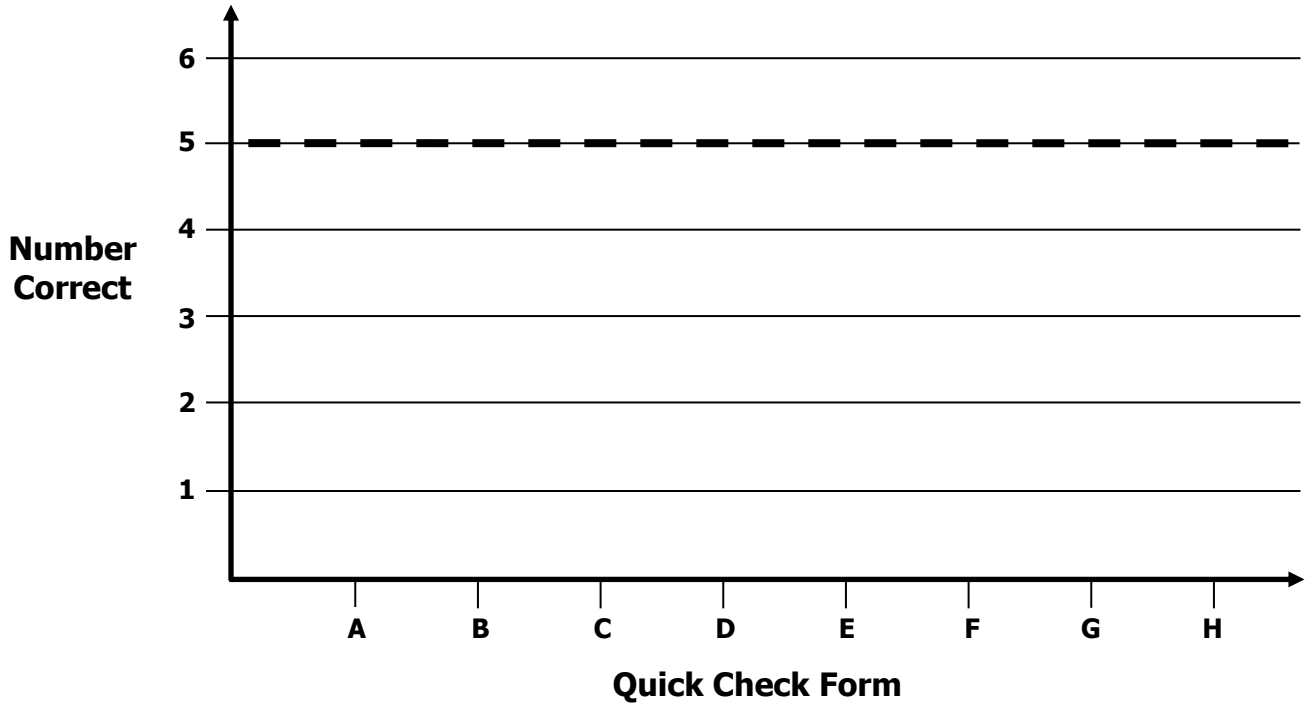
1. $\frac{3}{4} \times \frac{5}{6} = \_\_\_\_\_$	**2.** $\frac{1}{10} \times \frac{4}{9} = \_\_\_\_\_$
3. $\frac{2}{5} \times \frac{1}{4} = \_\_\_\_\_$	**4.** $\frac{2}{3} \div \frac{4}{5} = \_\_\_\_\_$
5. $\frac{3}{4} \div \frac{6}{7} = \_\_\_\_\_$	**6.** $\frac{5}{9} \div \frac{1}{3} = \_\_\_\_\_$

Growth Chart

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Goal: 5 out of 6 correct



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

Name _____ Date _____

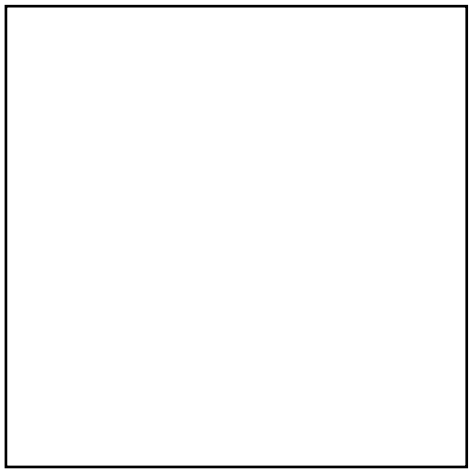
Learning Target: I will multiply and divide fractions

Session 2: Guided Practice (We Do)

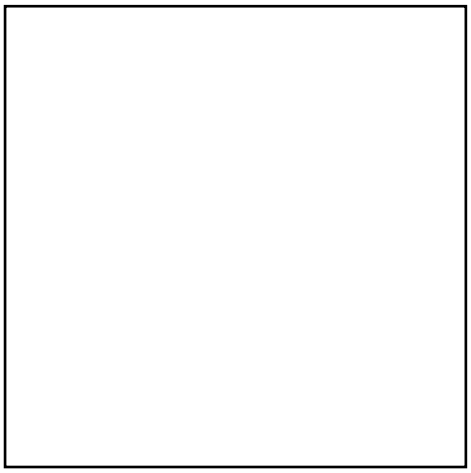
We Do Together: (Teacher Actions)

- Restate each problem based on your conceptual understanding.
  Problem 1: How many groups of 1 eighths are in 1 half?
  Problem 2: 1 half of 1 eighth is equal to what part of the whole?
- Use the square guide to help you draw the fractions given in each problem.

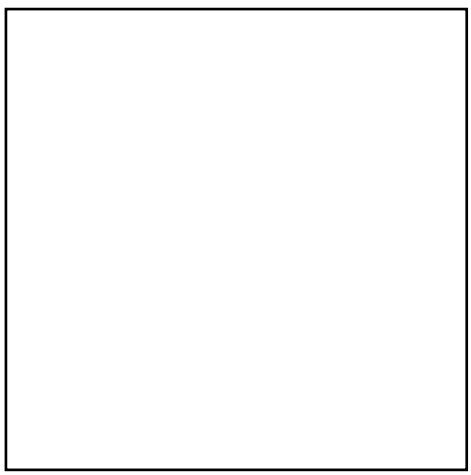
1. $\frac{1}{2} \div \frac{1}{8} =$ _____



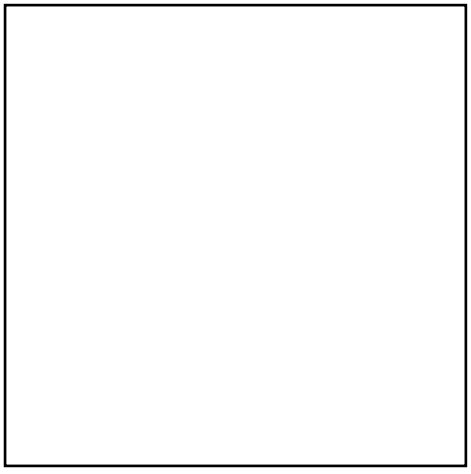
2. $\frac{1}{2} \times \frac{1}{8} =$ _____



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



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



Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 2: Guided Practice (We Do Continued)

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

- Take turns restating each problem.
- Use the square guide to help you draw the fractions given in each problem.

5. $\frac{1}{2} \div \frac{1}{8} =$ _____

6. $\frac{1}{2} \times \frac{1}{8} =$ _____

7. $\frac{1}{2} \div \frac{1}{6} =$ _____

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

Session 2: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form B

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

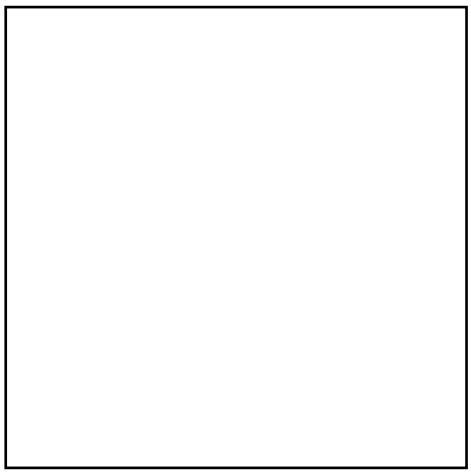
1. $\frac{4}{5} \times \frac{1}{6} = \_\_\_\_\_$	**2.** $\frac{2}{5} \times \frac{7}{8} = \_\_\_\_\_$
3. $\frac{3}{4} \times \frac{2}{6} = \_\_\_\_\_$	**4.** $\frac{2}{5} \div \frac{5}{6} = \_\_\_\_\_$
5. $\frac{1}{4} \div \frac{2}{5} = \_\_\_\_\_$	**6.** $\frac{7}{8} \div \frac{2}{9} = \_\_\_\_\_$

Session 3: Modeling (I Do)

Learning Target: I will multiply and divide fractions

Readiness for solving 1-step algebraic equations

Yesterday, Joe's family ate three-fourths of a square cake for dessert. If each serving size was equal to three-eighths of the whole cake, how many servings of the cake were eaten?



Session 3: **Modeling** (I Do – Visual Support)

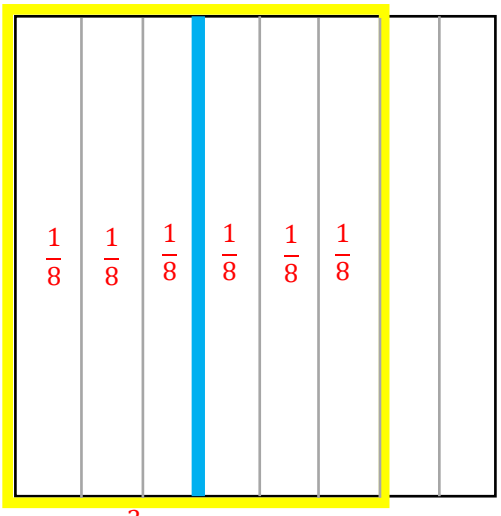
Learning Target: I will multiply and divide fractions

Readiness for solving 1-step algebraic equations

Yesterday, Joe's family ate three-fourths of a square cake for dessert. If each serving size was equal to three-eighths of the whole cake, how many servings of the cake were eaten?

$\frac{6}{8} \div \frac{3}{8} =$ 2 groups

$\frac{3}{4} \div \frac{3}{8} =$ 2



$\frac{3}{4}$ *of the whole*

Session 3: **Modeling** (I Do - Teacher Notes)

Learning Target: I will multiply and divide fractions

Readiness for solving 1-step algebraic equations

Yesterday, Joe's family ate three-fourths of a square cake for dessert. If each serving size was equal to three-eighths of the whole cake, how many servings of the cake were eaten?

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 Joe's family eating a square cake.

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

I need to find how many servings of cake were eaten.

Third, I need to determine what I know.

I know that Joe's family ate 3 fourths of the cake and each serving size is equal to 3 eighths of the whole.

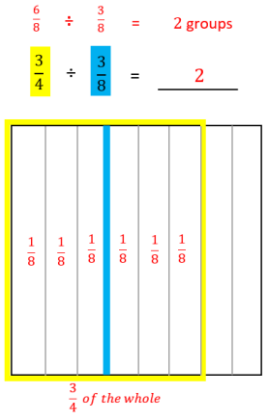
Fourth, I need to figure out what I can try.

I am going to try drawing how much cake they ate along with each serving size to see how many 3 eighths servings are in 3 fourths of the cake.
(Point to the square on the "Modeling" page and write the division problem above.)

I will begin by highlighting the 3 fourths of the cake that was eaten.
(Draw 3 vertical lines, outline 3 fourths using a yellow highlighter and label it "$\frac{3}{4}$ of the whole".)

Now I will separate the cake into serving sizes equal to 3 eighths by slicing each fourth into 2 equal parts.
(Draw 4 vertical lines to slice each fourth into eighths and label each section.)

I see that 3 fourths is equal to 6 eighths, so I can rewrite the division problem using 8 as a common denominator.
(Write $\frac{6}{8} \div \frac{3}{8}$ above the original problem.)



And, 6 eighths divided by 3 eighths is equal to 2 groups of 3 eighths.
(Use a blue highlighter to separate 2 groups of 3 eighths in the drawing and write the answer.)

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

I found that dividing numerators when the denominators are common will tell me how many groups make up the original fractional part. It makes sense because when fractions have common denominators, they have equivalent parts. And when you divide numbers with similar units, all you have to know is how many parts you have and how many parts make up one group…for example…6 eighths divided by 3 eighths is equal to 2 eighths in each group.

Name _____ Date _____

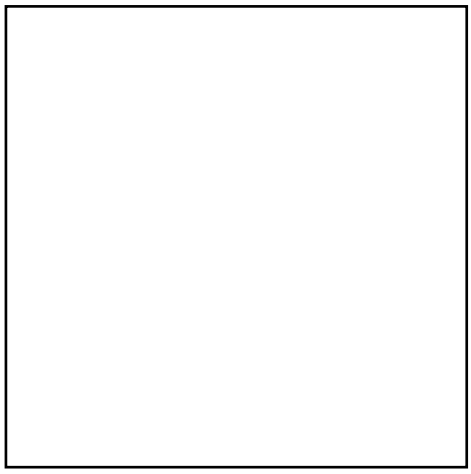
Learning Target: I will multiply and divide fractions

Session 3: Guided Practice (We Do)

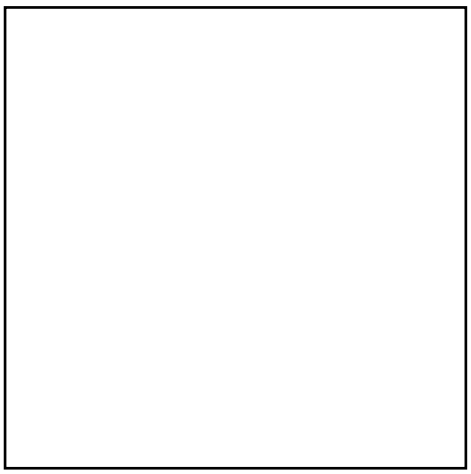
We Do Together: (Teacher Actions)

- Rewrite and solve each problem using common denominators.
- Use an area model to verify each answer.

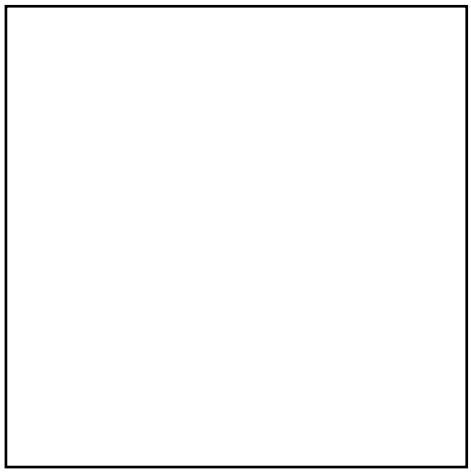
1. $\frac{1}{2} \div \frac{1}{6} =$ _____



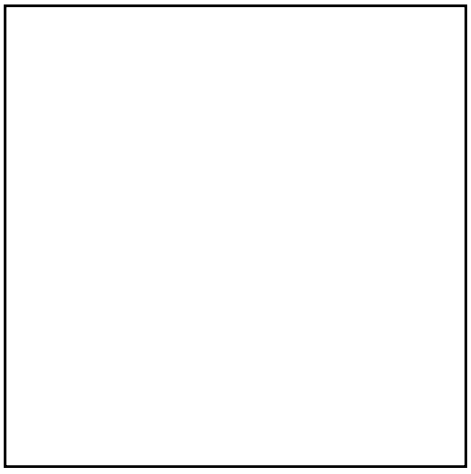
2. $\frac{1}{2} \div \frac{3}{8} =$ _____



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



4. $\frac{2}{3} \div \frac{4}{9} =$ _____



Name _____ Date _____

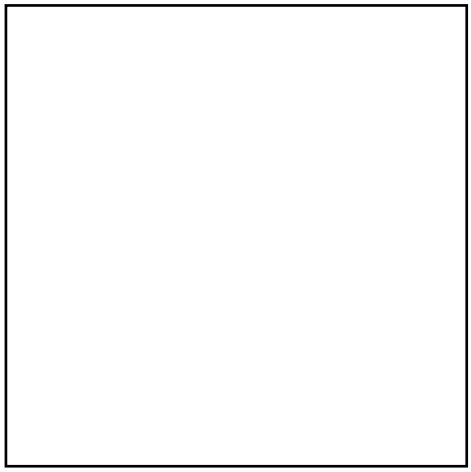
Learning Target: I will multiply and divide fractions

Session 3: Guided Practice (We Do Continued)

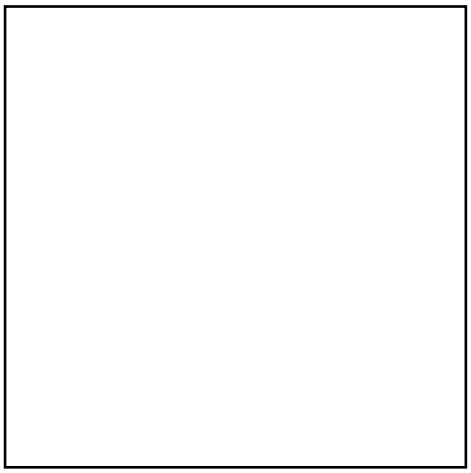
You Do Together: (As a class, or in small groups)

- Take turns leading using common denominators to divide.
- Use an area model to verify each answer.

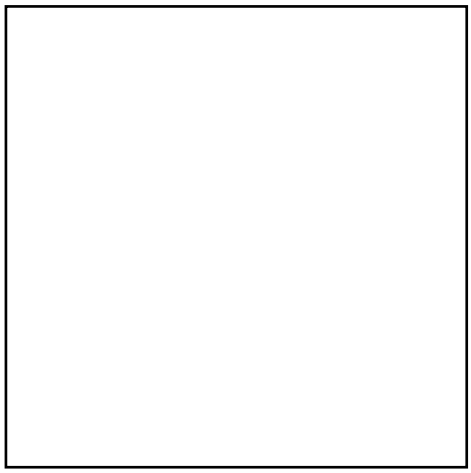
5. $\frac{3}{4} \div \frac{1}{8} =$ _____



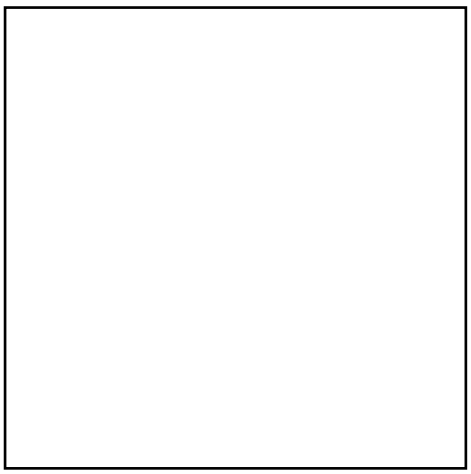
6. $\frac{1}{2} \div \frac{1}{3} =$ _____



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



8. $\frac{2}{3} \div \frac{2}{6} =$ _____



Name _____ Date _____

Learning Target: I will multiply and divide fractions

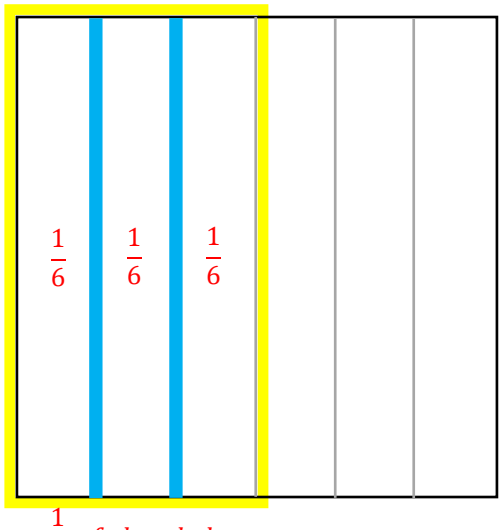
Session 3: Guided Practice (We Do – Teacher Notes)

We Do Together: (Teacher Actions)

- Rewrite and solve each problem using common denominators. Then, use an area model to verify each answer.

1. $\frac{3}{6} \div \frac{1}{6} =$ 3 groups of 1 sixth

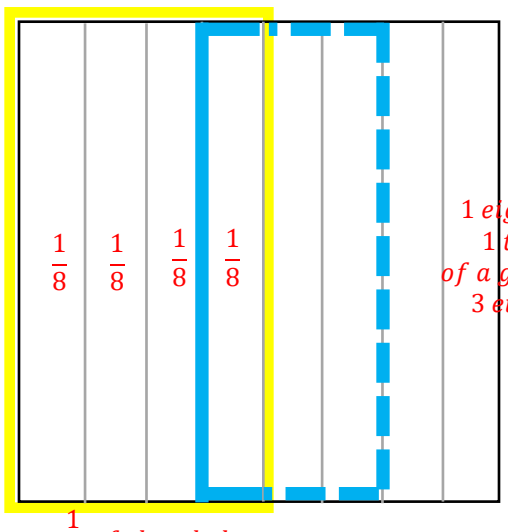
$\frac{1}{2} \div \frac{1}{6} = 3$



$\frac{1}{2}$ *of the whole*

2. $\frac{4}{8} \div \frac{3}{8} = 1\frac{1}{3}$ groups of 3

$\frac{1}{2} \div \frac{3}{8} = 1\frac{1}{3}$

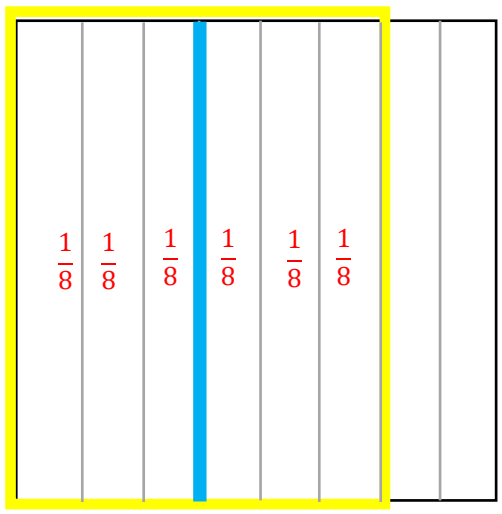


1 eighth is 1 third of a group of 3 eighths

$\frac{1}{2}$ *of the whole*

3. $\frac{6}{8} \div \frac{3}{8} =$ 2 groups of 3 eighths

$\frac{3}{4} \div \frac{3}{8} = 2$

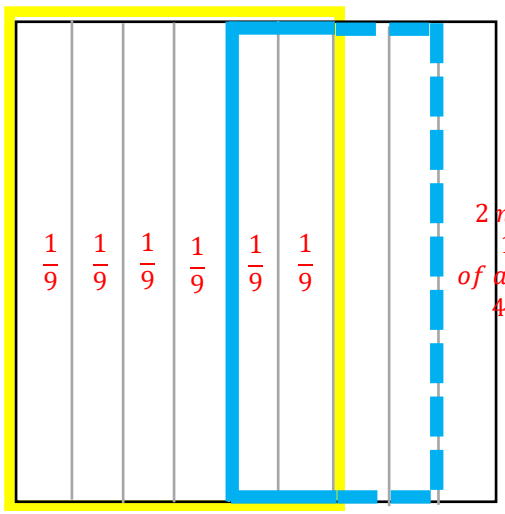


$\frac{3}{4}$ *of the whole*

4. $\frac{6}{9} \div \frac{4}{9} = 1\frac{1}{2}$ groups of 4 ninths

$\frac{2}{3} \div \frac{4}{9} = 1\frac{1}{2}$

Note: *To draw ninths using the drawing guide, draw thirds, then estimate thirds of each third.*



2 ninths is 1 half of a group of 4 ninths

$\frac{2}{3}$ *of the whole*

Session 3: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form C

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

1. $\frac{1}{3} \times \frac{3}{5} = \_\_\_\_\_$	**2.** $\frac{4}{5} \times \frac{3}{8} = \_\_\_\_\_$
3. $\frac{2}{5} \times \frac{3}{4} = \_\_\_\_\_$	**4.** $\frac{1}{4} \div \frac{5}{6} = \_\_\_\_\_$
5. $\frac{3}{4} \div \frac{2}{3} = \_\_\_\_\_$	**6.** $\frac{5}{6} \div \frac{2}{7} = \_\_\_\_\_$

Name _____ Date _____

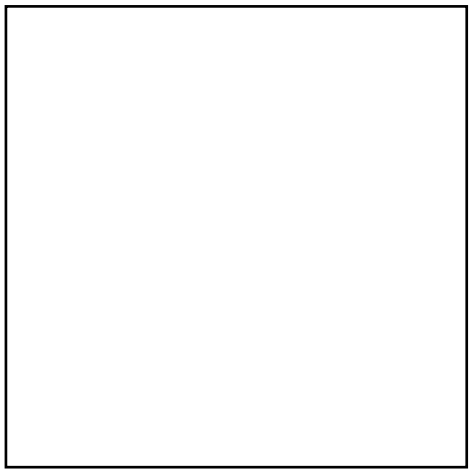
Learning Target: I will multiply and divide fractions

Session 4: Guided Practice (We Do)

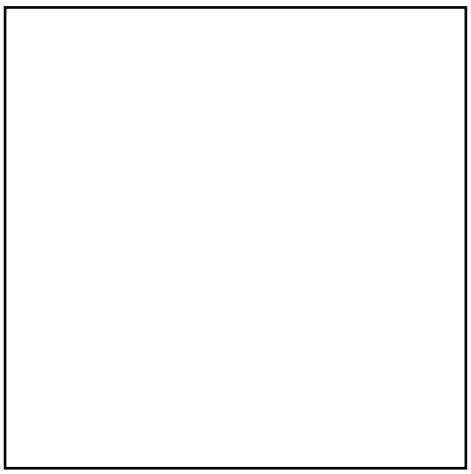
We Do Together: (Teacher Actions)

- Rewrite and solve each problem using common denominators.
- Use an area model to verify each answer.

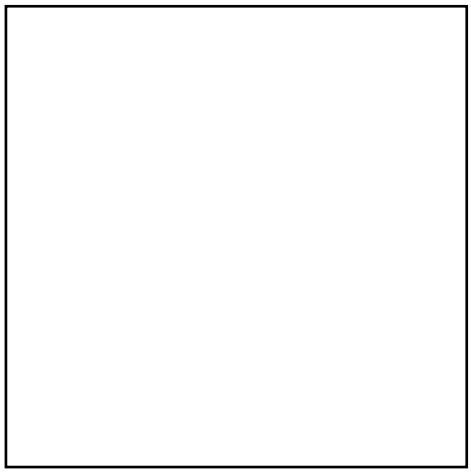
1. $\frac{1}{2} \div \frac{1}{8} =$ _____



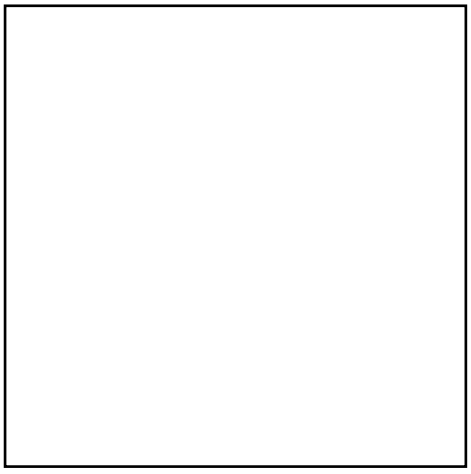
2. $\frac{1}{2} \div \frac{3}{4} =$ _____



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



4. $\frac{2}{3} \div \frac{2}{9} =$ _____



Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 4: Guided Practice (We Do Continued)

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

- Take turns leading using common denominators to divide.
- Use an area model to verify each answer.

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

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

7. $\frac{7}{8} \div \frac{1}{4} =$ _____

8. $\frac{5}{6} \div \frac{2}{3} =$ _____

Session 4: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form D

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

1. $\frac{2}{3} \times \frac{4}{5} = \_\_\_\_\_$	**2.** $\frac{7}{10} \times \frac{2}{5} = \_\_\_\_\_$
3. $\frac{2}{8} \times \frac{2}{4} = \_\_\_\_\_$	**4.** $\frac{2}{3} \div \frac{3}{4} = \_\_\_\_\_$
5. $\frac{5}{6} \div \frac{2}{5} = \_\_\_\_\_$	**6.** $\frac{9}{10} \div \frac{1}{3} = \_\_\_\_\_$

Name _____ Date _____

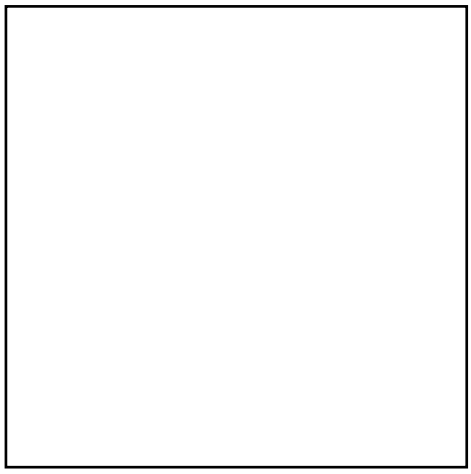
Learning Target: I will multiply and divide fractions

Session 5: Guided Practice (We Do)

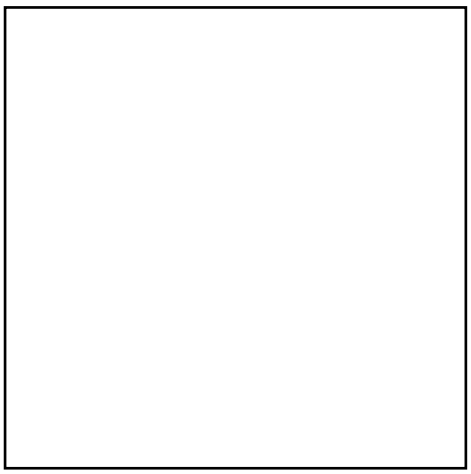
We Do Together: (Teacher Actions)

- Rewrite and solve each problem using common denominators.
- Use an area model to verify each answer.

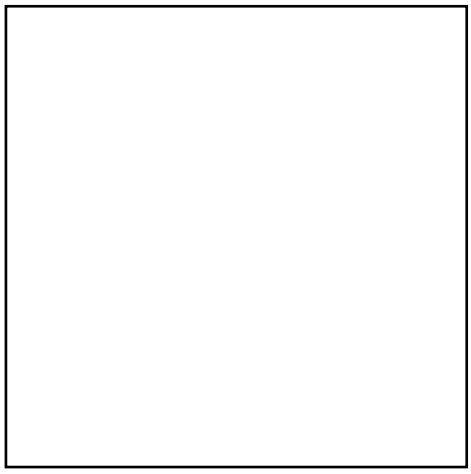
1. $\frac{1}{4} \div \frac{1}{8} =$ _____



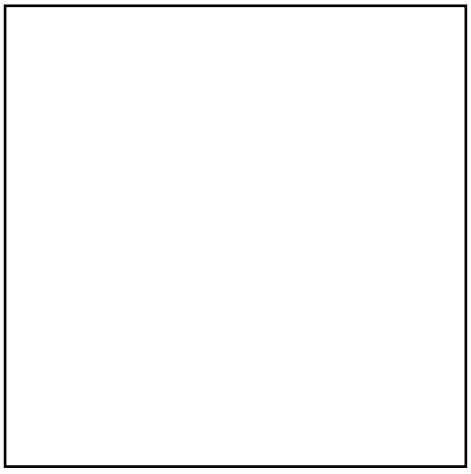
2. $\frac{1}{2} \div \frac{5}{8} =$ _____



3. $\frac{5}{6} \div \frac{1}{3} =$ _____



4. $\frac{2}{3} \div \frac{2}{9} =$ _____



Name _____ Date _____

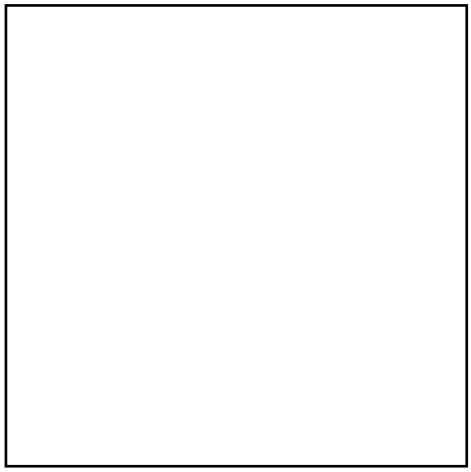
Learning Target: I will multiply and divide fractions

Session 5: Guided Practice (We Do Continued)

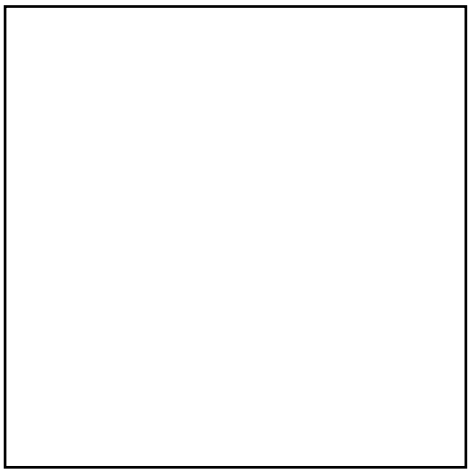
You Do Together: (As a class, or in small groups)

- Take turns leading using common denominators to divide.
- Use an area model to verify each answer.

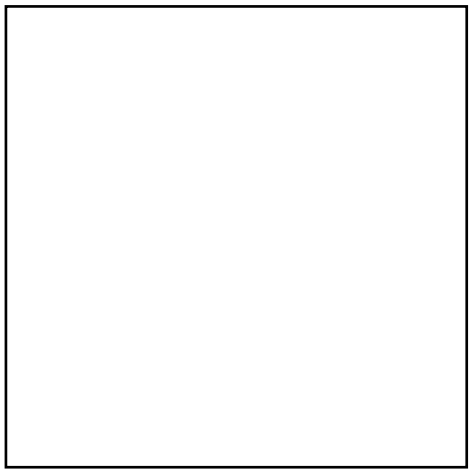
5. $\frac{3}{4} \div \frac{1}{2} =$ _____



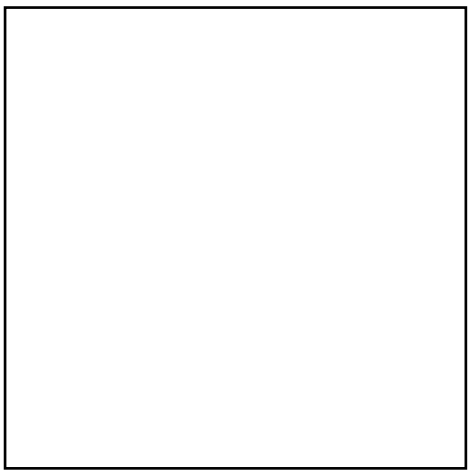
6. $\frac{2}{3} \div \frac{1}{2} =$ _____



7. $\frac{8}{9} \div \frac{2}{3} =$ _____



8. $\frac{7}{8} \div \frac{1}{4} =$ _____



Session 5: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form E

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

1. $\frac{3}{4} \times \frac{5}{6} =$ _____	**2.** $\frac{1}{10} \times \frac{4}{9} =$ _____
3. $\frac{2}{5} \times \frac{1}{4} =$ _____	**4.** $\frac{2}{3} \div \frac{4}{5} =$ _____
5. $\frac{3}{4} \div \frac{6}{7} =$ _____	**6.** $\frac{5}{9} \div \frac{1}{3} =$ _____

Session 6: Modeling (I Do)

Learning Target: I will multiply and divide fractions **Readiness** for solving 1-step algebraic equations

Levi showed his dad how to solve $\frac{3}{4} \div \frac{2}{8}$ using the common denominator method. His dad appreciated how it worked and said, "When I was your age, we were taught a multiplication strategy to divide fractions! My teachers taught us to rewrite fraction division problems as multiplication by the reciprocal. And, we would have solved the problem as $\frac{3}{4} \times \frac{8}{2}$."

Verify that the answer to $\frac{3}{4} \times \frac{8}{2}$ is the same as Levi's answer to $\frac{3}{4} \div \frac{2}{8}$.

$$\frac{3}{4}\begin{matrix}\times 2\\ \times 2\end{matrix} \div \frac{2}{8} = \frac{6}{8} \div \frac{2}{8} = \frac{6 \div 2}{8 \div 8} = \frac{3}{1} = 3$$

Session 6: Modeling (I Do – Visual Support)

Learning Target: I will multiply and divide fractions

Readiness for solving 1-step algebraic equations

Levi showed his dad how to solve $\frac{3}{4} \div \frac{2}{8}$ using the common denominator method. His dad appreciated how it worked and said, "When I was your age, we were taught a multiplication strategy to divide fractions! My teachers taught us to rewrite fraction division problems as multiplication by the reciprocal. And, we would have solved the problem as $\frac{3}{4} \times \frac{8}{2}$."

Verify that the answer to $\frac{3}{4} \times \frac{8}{2}$ is the same as Levi's answer to $\frac{3}{4} \div \frac{2}{8}$.

$$\frac{3}{4}\begin{matrix}^{\times 2}\\ _{\times 2}\end{matrix} \div \frac{2}{8} = \frac{6}{8} \div \frac{2}{8} = \frac{6 \div 2}{8 \div 8} = \frac{3}{1} = 3$$

$$\frac{3}{4} \times \frac{8}{2} = \frac{3 \times 8}{4 \times 2} = \frac{24}{8} = \frac{3}{1} = 3$$

8 x 3

8 x 1

Session 6: Modeling (I Do - Teacher Notes)

Learning Target: I will multiply and divide fractions **Readiness** for solving 1-step algebraic equations

Levi showed his dad how to solve $\frac{3}{4} \div \frac{2}{8}$ using the common denominator method. His dad appreciated how it worked and said, "When I was your age, we were taught a multiplication strategy to divide fractions! My teachers taught us to rewrite fraction division problems as multiplication by the reciprocal. And, we would have solved the problem as $\frac{3}{4}$ x $\frac{8}{2}$."

Verify that the answer to $\frac{3}{4}$ x $\frac{8}{2}$ is the same as Levi's answer to $\frac{3}{4} \div \frac{2}{8}$.

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 Levi's dad sharing how he was taught to divide by a fraction.

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

I need to find if the answer to $\frac{3}{4}$ x $\frac{8}{2}$ is the same as Levi's answer to $\frac{3}{4} \div \frac{2}{8}$.

Third, I need to determine what I know.

I know that Levi found that 3 fourths divided by 2 eighths is equal to 3.

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

I am going to try using Levi's dad's multiplication strategy to see if I get the same answer.

The reciprocal of $\frac{2}{8}$ is $\frac{8}{2}$, so I need to multiply $\frac{3}{4}$ by $\frac{8}{2}$.
(Write the new multiplication problem below the division problem.)

And, to find 3 fourths of 8 halves, I will multiply the denominators to find the size of the new fractional parts. Similarly, I will multiply the numerators to find how many fractional parts I have.

4 times 2 is equal to 8 (Write "4 x 2", "=" and "8" in the denominators.)

3 times 8 is equal to 24 (Write "3 x 8" and "24" in the numerators.)

Since 8 is a factor of 24, we can simplify the numerator and denominator by 3…8 times 3 is equal to 24
(Write 8 x 3 by the numerator)

And, 8 times 1 is equal to 8
(Write 8 x 1 by the denominator)

The factors of 8 cancel out each other leaving me with 3 in the numerator and 1 in the denominator, which is equal to 3.

$$\frac{3}{4} \times \frac{8}{2} = \frac{3 \times 8}{4 \times 2} = \frac{24}{8} = \frac{3}{1} = 3$$

(8 x 3 over 24; 8 x 1 under 8)

(Write "= 3" as the answer.)

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

I found that Levi's dad's method gave the same answer as Levi's. I am not sure why it gave the same answer, but let's see if the "multiply by the reciprocal" method works for more than one problem.

Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Solve each problem using Levi's and his dad's methods.

	Divide Using Common Denominators	Multiply by the Reciprocal
1. $\frac{1}{2} \div \frac{1}{6}$		
2. $\frac{3}{8} \div \frac{1}{2}$		
3. $\frac{3}{4} \div \frac{3}{8}$		
4. $\frac{2}{3} \div \frac{4}{9}$		

Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Solve each problem using Levi's and his dad's methods.

	Divide Using Common Denominators	Multiply by the Reciprocal
5. $\frac{3}{4} \div \frac{1}{8}$		
6. $\frac{4}{9} \div \frac{2}{3}$		
7. $\frac{3}{4} \div \frac{5}{8}$		
8. $\frac{2}{3} \div \frac{2}{6}$		

Name _____ Date _____

Learning Target: I will multiply and divide fractions

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

We Do Together: (Teacher Actions)

- Solve each problem using Levi's and his dad's methods.

	Divide Using Common Denominators	Multiply by the Reciprocal
1. $\frac{1}{2} \div \frac{1}{6}$	$\frac{1}{2} \overset{\times 3}{\underset{\times 3}{\div}} \frac{1}{6} = \frac{3}{6} \div \frac{1}{6} = \frac{3 \div 1}{6 \div 6} = \frac{3}{1} = 3$	$\frac{1}{2} \times \frac{6}{1} = \frac{1 \times 6}{2 \times 1} = \frac{6}{2} = \frac{3}{1} = 3$ (2 × 3, 2 × 1)
2. $\frac{3}{8} \div \frac{1}{2}$	$\frac{3}{8} \div \frac{1}{2} \overset{\times 4}{\underset{\times 4}{}} = \frac{3}{8} \div \frac{4}{8} = \frac{3 \div 4}{8 \div 8} = \frac{\frac{3}{4}}{1} = \frac{3}{4}$	$\frac{3}{8} \times \frac{2}{1} = \frac{3 \times 2}{8 \times 1} = \frac{6}{8} = \frac{3}{4}$ (2 × 3, 2 × 4)
3. $\frac{3}{4} \div \frac{3}{8}$	$\frac{3}{4} \overset{\times 2}{\underset{\times 2}{\div}} \frac{3}{8} = \frac{6}{8} \div \frac{3}{8} = \frac{6 \div 3}{8 \div 8} = \frac{2}{1} = 2$	$\frac{3}{4} \times \frac{8}{3} = \frac{3 \times 8}{4 \times 3} = \frac{24}{12} = \frac{2}{1} = 2$ (12 × 2, 12 × 1)
4. $\frac{2}{3} \div \frac{4}{9}$	$\frac{2}{3} \overset{\times 3}{\underset{\times 3}{\div}} \frac{4}{9} = \frac{6}{9} \div \frac{4}{9} = \frac{6 \div 4}{9 \div 9} = \frac{\frac{6}{4}}{1} = \frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2}$	$\frac{2}{3} \times \frac{9}{4} = \frac{2 \times 9}{3 \times 4} = \frac{18}{12} = \frac{3}{2} = 1\frac{1}{2}$ (6 × 3, 6 × 2)

Session 6: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form F

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

1. $\frac{4}{5} \times \frac{1}{6} = \_\_\_\_\_$	**2.** $\frac{2}{5} \times \frac{7}{8} = \_\_\_\_\_$
3. $\frac{3}{4} \times \frac{2}{6} = \_\_\_\_\_$	**4.** $\frac{2}{5} \div \frac{5}{6} = \_\_\_\_\_$
5. $\frac{1}{4} \div \frac{2}{5} = \_\_\_\_\_$	**6.** $\frac{7}{8} \div \frac{2}{9} = \_\_\_\_\_$

Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 7: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Solve each problem using Levi's and his dad's methods.

	Divide Using Common Denominators	Multiply by the Reciprocal
1. $\frac{1}{2} \div \frac{1}{8}$		
2. $\frac{7}{10} \div \frac{1}{2}$		
3. $\frac{1}{4} \div \frac{3}{12}$		
4. $\frac{2}{3} \div \frac{2}{15}$		

Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 7: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Solve each problem using Levi's and his dad's methods.

	Divide Using Common Denominators	Multiply by the Reciprocal
5. $\frac{2}{3} \div \frac{1}{12}$		
6. $\frac{7}{9} \div \frac{1}{3}$		
7. $\frac{3}{4} \div \frac{1}{8}$		
8. $\frac{2}{5} \div \frac{3}{10}$		

Session 7: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form G

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

1. $\frac{1}{3} \times \frac{3}{5} = \_\_\_\_\_$	**2.** $\frac{4}{5} \times \frac{3}{8} = \_\_\_\_\_$
3. $\frac{2}{5} \times \frac{3}{4} = \_\_\_\_\_$	**4.** $\frac{1}{4} \div \frac{5}{6} = \_\_\_\_\_$
5. $\frac{3}{4} \div \frac{2}{3} = \_\_\_\_\_$	**6.** $\frac{5}{6} \div \frac{2}{7} = \_\_\_\_\_$

Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 8: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Solve each problem using Levi's and his dad's methods.

	Divide Using Common Denominators	Multiply by the Reciprocal
1. $\frac{1}{3} \div \frac{1}{6}$		
2. $\frac{3}{10} \div \frac{1}{2}$		
3. $\frac{3}{4} \div \frac{5}{8}$		
4. $\frac{2}{3} \div \frac{4}{12}$		

Name _____ Date _____

Learning Target: I will multiply and divide fractions

Session 8: Guided Practice (We Do)

We Do Together: (Teacher Actions)

- Solve each problem using Levi's and his dad's methods.

	Divide Using Common Denominators	Multiply by the Reciprocal
5. $\frac{3}{4} \div \frac{4}{8}$		
6. $\frac{7}{9} \div \frac{2}{3}$		
7. $\frac{3}{4} \div \frac{7}{8}$		
8. $\frac{4}{5} \div \frac{2}{15}$		

Session 8: Self-Reflection

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I learn today about multiplying and dividing fractions?

- How confident do I feel about multiplying and dividing fractions on my own? *(Thumbs up, down, or sideways)*

Quick Check - Form H

Name_____ Date_____

Learning Target: I will multiply and divide fractions.

Directions: Write the answer to each problem. (Work time: 4 minutes)

1. $\frac{2}{3} \times \frac{4}{5} = \_\_\_\_\_$	**2.** $\frac{7}{10} \times \frac{2}{5} = \_\_\_\_\_$
3. $\frac{2}{8} \times \frac{2}{4} = \_\_\_\_\_$	**4.** $\frac{2}{3} \div \frac{3}{4} = \_\_\_\_\_$
5. $\frac{5}{6} \div \frac{2}{5} = \_\_\_\_\_$	**6.** $\frac{9}{10} \div \frac{1}{3} = \_\_\_\_\_$

Independent Practice (You Do)

Learning Target: I will multiply and divide fractions **Readiness** for solving 1-step algebraic equations

Title of Game: Play "**Multiplication and Division 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 and divide fractions

Independent Practice: Multiplication/Division Match-up!

(Recording Sheet)

Problem Cards (Set A)

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	$\frac{1}{2} \times \frac{1}{6}$ Set A	$\frac{1}{2} \div \frac{2}{3}$ Set A	$\frac{2}{3} \times \frac{3}{6}$ Set A	$\frac{1}{3} \div \frac{5}{6}$ Set A
	$\frac{2}{3} \times \frac{1}{6}$ Set A	$\frac{1}{4} \div \frac{2}{5}$ Set A	$\frac{3}{4} \times \frac{4}{5}$ Set A	$\frac{3}{4} \div \frac{5}{6}$ Set A
	$\frac{2}{5} \times \frac{3}{8}$ Set A	$\frac{2}{5} \div \frac{1}{8}$ Set A		
Set A_2	$\frac{1}{2} \times \frac{1}{6}$ Set A	$\frac{1}{2} \div \frac{2}{3}$ Set A	$\frac{2}{3} \times \frac{3}{6}$ Set A	$\frac{1}{3} \div \frac{5}{6}$ Set A
	$\frac{2}{3} \times \frac{1}{6}$ Set A	$\frac{1}{4} \div \frac{2}{5}$ Set A	$\frac{3}{4} \times \frac{4}{5}$ Set A	$\frac{3}{4} \div \frac{5}{6}$ Set A
	$\frac{2}{5} \times \frac{3}{8}$ Set A	$\frac{2}{5} \div \frac{1}{8}$ Set A		

Answer Cards (Set A)

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	$\frac{1}{12}$ Set A	$\frac{3}{4}$ Set A	$\frac{1}{3}$ Set A	$\frac{2}{5}$ Set A
	$\frac{1}{9}$ Set A	$\frac{5}{8}$ Set A	$\frac{3}{5}$ Set A	$\frac{9}{10}$ Set A
	$\frac{3}{20}$ Set A	$3\frac{1}{5}$ Set A		
Set A_2	$\frac{1}{12}$ Set A	$\frac{3}{4}$ Set A	$\frac{1}{3}$ Set A	$\frac{2}{5}$ Set A
	$\frac{1}{9}$ Set A	$\frac{5}{8}$ Set A	$\frac{3}{5}$ Set A	$\frac{9}{10}$ Set A
	$\frac{3}{20}$ Set A	$3\frac{1}{5}$ Set A		

Problem Cards (Set B)

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	$\frac{1}{2} \times \frac{5}{6}$ Set B	$\frac{2}{3} \div \frac{5}{6}$ Set B	$\frac{1}{3} \times \frac{9}{10}$ Set B	$\frac{1}{4} \div \frac{4}{5}$ Set B
	$\frac{3}{4} \times \frac{4}{5}$ Set B	$\frac{2}{3} \div \frac{8}{9}$ Set B	$\frac{3}{5} \times \frac{5}{8}$ Set B	$\frac{5}{6} \div \frac{5}{9}$ Set B
	$\frac{5}{9} \times \frac{3}{10}$ Set B	$\frac{2}{9} \div \frac{3}{4}$ Set B		
Set B_2	$\frac{1}{2} \times \frac{5}{6}$ Set B	$\frac{2}{3} \div \frac{5}{6}$ Set B	$\frac{1}{3} \times \frac{9}{10}$ Set B	$\frac{1}{4} \div \frac{4}{5}$ Set C
	$\frac{3}{4} \times \frac{4}{5}$ Set B	$\frac{2}{3} \div \frac{8}{9}$ Set B	$\frac{3}{5} \times \frac{5}{8}$ Set B	$\frac{5}{6} \div \frac{5}{9}$ Set B
	$\frac{5}{9} \times \frac{3}{10}$ Set B	$\frac{2}{9} \div \frac{3}{4}$ Set B		

Answer Cards (Set B)

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	$\frac{5}{12}$ Set B	$\frac{4}{5}$ Set B	$\frac{3}{10}$ Set B	$\frac{5}{16}$ Set B
	$\frac{3}{5}$ Set B	$\frac{3}{4}$ Set B	$\frac{3}{8}$ Set B	$1\frac{1}{2}$ Set B
	$\frac{1}{6}$ Set B	$\frac{8}{27}$ Set B		
Set B_2	$\frac{5}{12}$ Set B	$\frac{4}{5}$ Set B	$\frac{3}{10}$ Set B	$\frac{5}{16}$ Set B
	$\frac{3}{5}$ Set B	$\frac{3}{4}$ Set B	$\frac{3}{8}$ Set B	$1\frac{1}{2}$ Set B
	$\frac{1}{6}$ Set B	$\frac{8}{27}$ Set B		

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?*