

7th Grade Tier 2 Intervention Lessons

Readiness Standard 1 - 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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IES Recommendations for Tier 2 and 3 intervention lessons:

 Instructional materials for students receiving interventions should focus intensely on in-depth treatment of whole numbers in kindergar- ten through grade 5 and on rational numbers in grades 4 through 8. These materials should be selected by committee. 	Low
 Instruction during the intervention should be explicit and systematic. This includes providing models of proficient problem solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review. 	Strong
4. Interventions should include instruction on solving word problems that is based on common underlying structures.	Strong
 Intervention materials should include opportunities for students to work with visual representations of mathematical ideas and interven- tionists should be proficient in the use of visual representations of mathematical ideas. 	Moderate
6. Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts.	Moderate
7. Monitor the progress of students receiving supplemental instruction and other students who are at risk.	Low
8. Include motivational strategies in tier 2 and tier 3 interventions.	Low

(Institute of Educational Sciences, Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools, 2009, p. 6)

Gradual release of responsibility model

Focus Lesson "I do it" Guided Instruction Collaborative "You do it together" Independent "You do it alone"

Figure 1

(Dr. Douglas Fisher, Effective Use of the Gradual Release of Responsibility Model)



Planning Guide: Session 1

7th Grade - Readiness Standard 1 - 6.NS.1

Learning Target: I will multiply and divide fractions

Readiness for solving 1-step algebraic equations

Recommended Actions		
Beginning (15 min.)	 Review the readiness standard with the intervention group using the Guided Review Introduce the learning target and why it is important for future learning Read each question on the Guided Review and ask students to share what they remember from the previous school year. 	
Middle (5 min.)	 Ask students to <u>reflect</u> on their progress towards the learning target What did I remember about the learning target? What did I learn today about the learning target? How confident do I feel about doing the learning target on my own? 	
End (10 min.)	 Assess each student's progress using Quick Check – Form A Guide students to self-correct their Quick Check – Form A Guide students to chart their progress by recording the date and Quick Check score in their Growth Chart Collect each student's Quick Check and Growth Chart 	
After	 Create sub-groups to differentiate the middle of sessions 2 through 8 Group 1 – Include students who did not meet the learning goal Group 2 – Include students who met or exceeded the learning goal 	

7th Grade Fall Guided Review

Readiness Standard 1 - 6.NS.1

Name_____ Date____

Learning Target: I will multiply and divide fractions.

1.

Multiply:

$$\frac{2}{3}$$
 x $\frac{5}{6}$

 $\circ \frac{7}{18}$

 \circ $\frac{5}{9}$

 $\bigcirc \frac{7}{9}$

 $\bigcirc \frac{15}{12}$

2.

Divide:

$$\frac{3}{4} \div \frac{5}{7}$$

 $\bigcirc \frac{15}{28}$

 $\bigcirc \frac{15}{11}$

 $\bigcirc \frac{21}{20}$

 $\bigcirc \quad \frac{20}{21}$

3.

Divide:

$$\frac{7}{8} \div \frac{1}{2}$$

 $\circ \frac{7}{16}$

 \circ $\frac{4}{5}$

 $\circ \frac{4}{7}$

 $\circ \frac{7}{4}$

7th Grade Winter Guided Review

Readiness Standard 1 - 6.NS.1

Name_____ Date____

Learning Target: I will multiply and divide fractions.

1.

Multiply:

$$\frac{2}{5}$$
 x $\frac{3}{4}$

- \circ $\frac{5}{9}$
- $\circ \frac{3}{10}$
- \circ $\frac{5}{20}$
- $\bigcirc \frac{8}{15}$

2.

Divide:

$$\frac{2}{3} \div \frac{4}{5}$$

- $\circ \frac{3}{4}$
- $\bigcirc \frac{8}{15}$
- \circ $\frac{5}{6}$
- $\circ \frac{6}{5}$

3.

Divide:

$$\frac{5}{6} \div \frac{1}{3}$$

- $0 \frac{7}{16}$
- \circ $\frac{4}{5}$
- \circ $\frac{2}{5}$
- $\bigcirc \frac{5}{2}$

7th Grade Spring Guided Review

Readiness Standard 1 - 6.NS.1

Name______ Date_____

Learning Target: I will multiply and divide fractions.

1.

Multiply:

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

$$\bigcirc \frac{5}{14}$$

$$\bigcirc \frac{2}{15}$$

$$\bigcirc \frac{5}{45}$$

$$\bigcirc \frac{10}{27}$$

2.

Divide:

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

$$\circ \frac{1}{2}$$

$$\circ \frac{5}{7}$$

$$\circ \frac{9}{8}$$

$$\circ \frac{8}{9}$$

3.

Divide:

$$\frac{4}{7} \div \frac{2}{5}$$

$$\circ \frac{7}{10}$$

$$\circ \frac{10}{7}$$

$$\circ \frac{8}{35}$$

$$\bigcirc \frac{1}{2}$$



Session 1: Self-Reflection

7th Grade - Readiness Standard 1 - 6.NS.1

Learning Target: I will multiply and divide fractions

Briefly discuss student responses

- What did I remember about multiplying and dividing fractions?
- 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

7th Grade - Readiness Standard 1 - 6.NS.1

Name	Date
------	------

Learning Target: I will multiply and divide fractions.

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

$$\frac{3}{4} \times \frac{5}{6} =$$

$$\frac{1}{10} \times \frac{4}{9} =$$

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

$$\frac{2}{3} \div \frac{4}{5} = \underline{\hspace{1cm}}$$

$$\frac{3}{4} \div \frac{6}{7} =$$

$$\frac{5}{9} \div \frac{1}{3} = \underline{\hspace{1cm}}$$



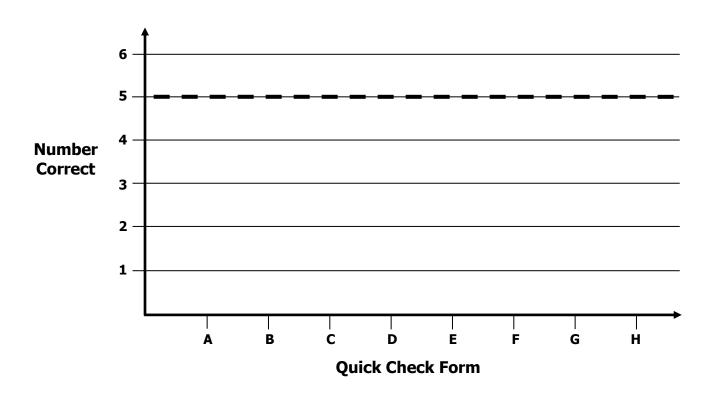
Growth Chart

7th Grade - Readiness Standard 1 - 6.NS.1

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:		



Planning Guide: Sessions 2 Through 8

7th Grade - Readiness Standard 1 - 6.NS.1

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 as learning	nd ask each student to set a goal for today's
Middle (15 min.)	Group 1: (Students who <u>did not</u> meet the learning goal on the previous Quick Check)	Group 2: (Students who met the learning goal)
	 Model solving a word problem - "I do" Guided Practice - "We do together/ You do together" 	➤ Independent practice — "You do alone"
	Session 2: Draw to see the differences between dividing and multiplying fractions. Session 3: Use drawings to understand using common denominators to divide fractions Session 4: Use common denominators and "multiply	Activity: Multiplication/Division Match-up!
	by the reciprocal" to divide fractions	(Look for additional activities in 6 th grade core instruction resources.)
End (10 min.)	 Bring the students back together. Ask students to reflect on their progress towards the What did I learn today about multiplying and the How confident do I feel about multiplying and (Thumbs up, down, or sideways) Assess each student's progress using the next Quick Guide students to self-correct their Quick Check Guide students to chart their progress in their Growth I finot using Delta Math lessons, record the act Collect each student's Quick Check and Growth Check 	dividing fractions? I dividing fractions on my own? Ek Check form wth Chart tivity in the table
After	 Regroup students to differentiate the middle of session Promote students who met the learning goal for Exit students who met the learning goal for Problem solve with a team to plan additional support 	ssions 3 through 8 pal to group 2 r a third time



Session 2: Modeling (I Do)

7th Grade - Readiness Standard 1 - 6.NS.1

Readiness for solving 1-step algebraic equations
pizza for dinner. If each piece was equal to one-eighth
re eaten?

Session 2: Modeling (I Do – Visual Support)

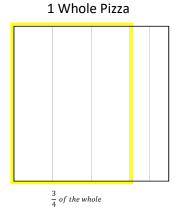
7th Grade - Readiness Standard 1 - 6.NS.1

Learning Target: I will multiply and divide fractions

Readiness for solving 1-step algebraic equations

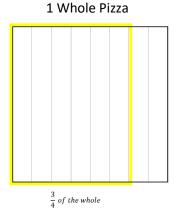
Last night, Andy's family ate three fourths of a square pizza for dinner. If each piece was equal to one-eighth of the whole pizza, how many servings of the pizza were eaten?

Draw 3 fourths of the whole



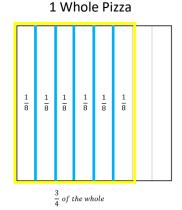
$$\frac{3}{4} \div \frac{1}{8} =$$

Separate the whole into eighths



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

Find how many eighths are in 3 fourths



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



Session 2: Modeling (I Do - Teacher Notes)

7th Grade - Readiness Standard 1 - 6.NS.1

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.)

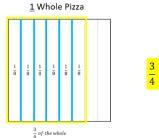
Now I will separate the pizza into serving sizes equal to 1 eighth by slicing each fourth in half using vertical lines.

(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.





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.

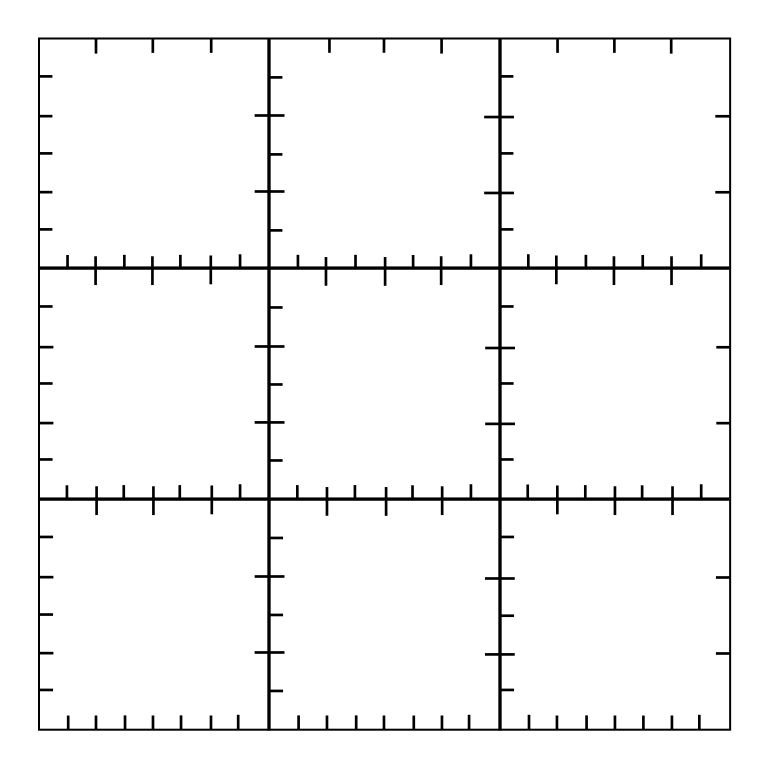


Guides for Drawing Fractions

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.



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 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	_
-	•

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



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

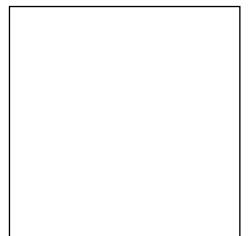






$$\frac{3}{4} \div \frac{2}{8} =$$

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



Learning Target: I will multiply and divide fractions

7th Grade - Readiness Standard 1 - 6.NS.1

Session 2: Guided Practice (We Do Continued)

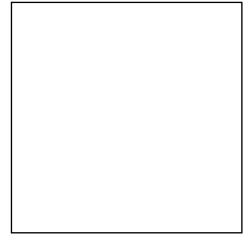
You Do Together: (As a class, or in small groups)

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

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



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

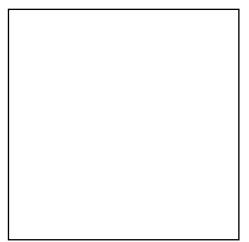






$$\frac{2}{3} \div \frac{2}{6} =$$

8.
$$\frac{2}{3}$$
 x $\frac{2}{6}$ =





Name _____ Date ____

Learning Target: I will multiply and divide fractions

7th Grade - Readiness Standard 1 - 6.NS.1

Session 2: 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?

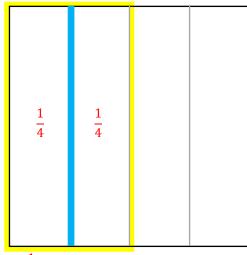
1 half of 1 fourth is 1 eighth of the whole

1.

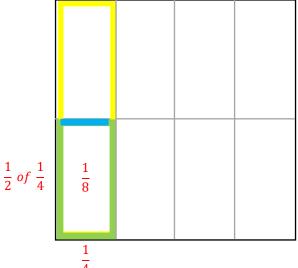
$$\frac{1}{2} \div \frac{1}{4} = 2$$

2.

$$\frac{1}{2} \quad x \quad \frac{1}{4} \quad = \quad \frac{1}{8}$$



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



 $\frac{1}{4}$ 3 fourths of 2 eighths is 3 sixteenths of the whole

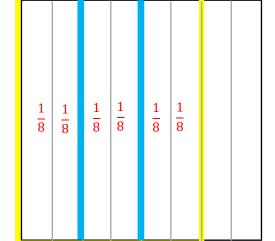
How many groups of 2 eighths are in 3 fourths?

3.

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

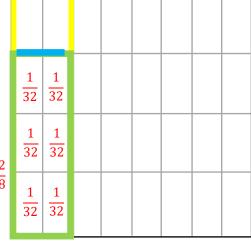
4.

$$\frac{3}{4}$$
 x $\frac{2}{8}$ = $\frac{6}{32}$ = $\frac{3}{16}$



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

 $\frac{3}{4}$ of $\frac{2}{8}$



 $\frac{2}{8}$



Session 2: Self-Reflection

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

Name	Date
------	------

Learning Target: I will multiply and divide fractions.

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

$$\frac{4}{5} \times \frac{1}{6} =$$

$$\frac{2}{5} \times \frac{7}{8} =$$

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

$$\frac{2}{5} \div \frac{5}{6} =$$

$$\frac{1}{4} \div \frac{2}{5} = \underline{\hspace{1cm}}$$

$$\frac{7}{8} \div \frac{2}{9} =$$



Session 3: Modeling (I Do)

7th Grade - Readiness Standard 1 - 6.NS.1

Learning Target: I will multiply and divide fractions Readiness for so	ving 1-step algebraic equations
readiless for so	ville i step digebrate 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?

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Session 3: Modeling (I Do – Visual Support)

7th Grade - Readiness Standard 1 - 6.NS.1

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?

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

 $\frac{3}{4}$ ÷ $\frac{3}{8}$ = 2

 $\frac{1}{8}$ $\frac{1$



Session 3: Modeling (I Do - Teacher Notes)

7th Grade - Readiness Standard 1 - 6.NS.1

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.

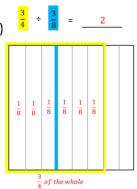
(Write
$$\frac{6}{8} \div \frac{3}{8}$$
 above the original problem.)



(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.



Learning Target: I will multiply and divide fractions

7th Grade - Readiness Standard 1 - 6.NS.1

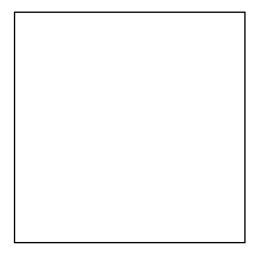
Session 3: Guided Practice (We Do)

We Do Together: (Teacher Actions)

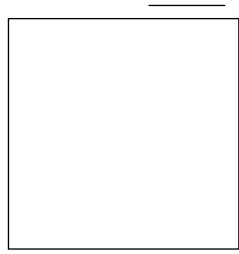
- > Rewrite and solve each problem using common denominators.
- Use an area model to verify each answer.

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

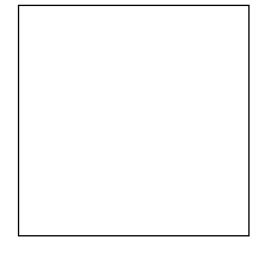
2.
$$\frac{1}{3} \div \frac{3}{3}$$



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



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



Learning Target: I will multiply and divide fractions

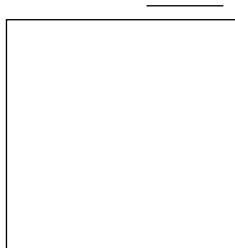
7th Grade - Readiness Standard 1 - 6.NS.1

Session 3: Guided Practice (We Do Continued)

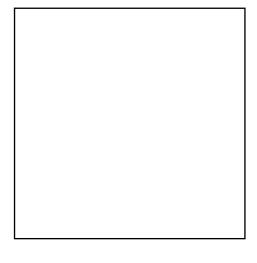
You Do Together: (As a class, or in small groups)

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

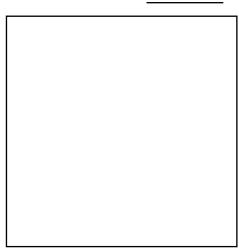
5.
$$\frac{3}{4} \div \frac{1}{8} =$$



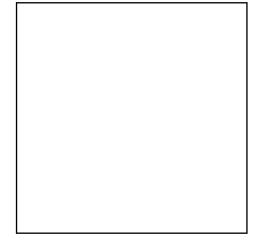
6.
$$\frac{1}{2} \div \frac{1}{3} =$$



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

7th Grade - Readiness Standard 1 - 6.NS.1

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.

3.

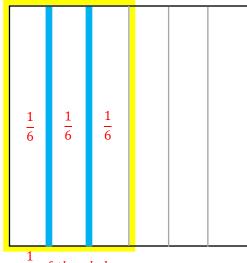
$$\frac{3}{6} \div \frac{1}{6} = 3 \text{ groups of 1 sixth}$$

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

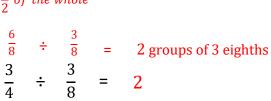
2.

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

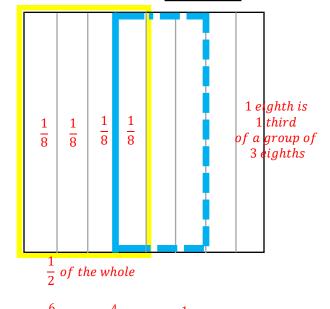
$$\frac{1}{2} \div \frac{3}{8} = 1 \frac{1}{3}$$



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



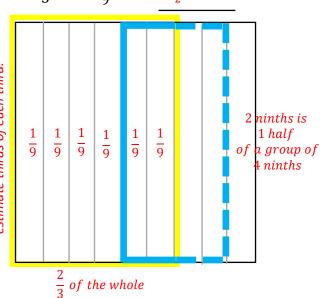
4.



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

 $\frac{1}{8} \frac{1}{8} \frac{1}{8} \frac{1}{8} \frac{1}{8} \frac{1}{8} \frac{1}{8}$ $\frac{3}{4}$ of the whole

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





Session 3: Self-Reflection

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

Name	Date
------	------

Learning Target: I will multiply and divide fractions.

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

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

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

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

$$\frac{1}{4} \div \frac{5}{6} = \underline{\hspace{1cm}}$$

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

$$\frac{5}{6} \div \frac{2}{7} =$$



Session 4: Modeling (I Do)

7th Grade - Readiness Standard 1 - 6.NS.1

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

$$\frac{3}{4} \div \frac{2}{8} = \frac{6}{8} \div \frac{2}{8} = \frac{6 \div 2}{8 \div 8} = \frac{3}{1} = 3$$



Session 4: Modeling (I Do – Visual Support)

7th Grade - Readiness Standard 1 - 6.NS.1

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

$$\frac{3}{4} \div \frac{2}{8} = \frac{6}{8} \div \frac{2}{8} = \frac{6 \div 2}{8 \div 8} = \frac{3}{1} = 3$$

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



Session 4: Modeling (I Do - Teacher Notes)

7th Grade - Readiness Standard 1 - 6.NS.1

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

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

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

(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

7th Grade - Readiness Standard 1 - 6.NS.1

Session 4: 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
$\frac{1}{2} \div \frac{1}{6}$		
$\frac{3}{8} \div \frac{1}{2}$		
$\frac{3}{4} \div \frac{3}{8}$		
$\frac{2}{3} \div \frac{4}{9}$		



Name	Date	

Learning Target: I will multiply and divide fractions

7th Grade - Readiness Standard 1 - 6.NS.1

Session 4: 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
$\frac{3}{4} \div \frac{1}{8}$		
$\frac{4}{9} \div \frac{2}{3}$		
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

7th Grade - Readiness Standard 1 - 6.NS.1

Session 4: 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	
$\frac{1}{2} \div \frac{1}{6}$	$\frac{1}{2} \div \frac{1}{6} = \frac{3}{6} \div \frac{1}{6} = \frac{3 \div 1}{6 \div 6} = \frac{3}{1} = 3$	$\frac{1}{2} \times \frac{6}{1} = \frac{1 \times 6}{2 \times 1} = \frac{6}{2} = \frac{3}{1} = 3$ 2×3 2×3 2×3 2×3	
$\frac{3}{8} \div \frac{1}{2}$	$\frac{3}{8} \div \frac{1}{2} = \frac{3}{8} \div \frac{4}{8} = \frac{3 \div 4}{8 \div 8} = \frac{\frac{3}{4}}{1} = \frac{3}{4}$	$\frac{3}{8} \times \frac{2}{1} = \frac{3 \times 2}{8 \times 1} = \frac{6}{8} = \frac{3}{4}$	
$\frac{3}{4} \div \frac{3}{8}$	$\frac{3}{4} \div \frac{3}{8} = \frac{6}{8} \div \frac{3}{8} = \frac{6 \div 3}{8 \div 8} = \frac{2}{1} = 2$	$\frac{3}{4} \times \frac{8}{3} = \frac{3 \times 8}{4 \times 3} = \frac{24}{12} = \frac{2}{1} = 2$	
$\frac{2}{3} \div \frac{4}{9}$	$ \frac{2}{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} $	$\frac{2}{3} \times \frac{9}{4} = \frac{2 \times 9}{3 \times 4} = \frac{18}{12} = \frac{3}{2} = 1\frac{1}{2}$	



Session 4: Self-Reflection

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

Name_____ Date____

Learning Target: I will multiply and divide fractions.

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

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

$$\frac{7}{10} \times \frac{2}{5} =$$

$$\frac{2}{8} \times \frac{2}{4} =$$

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

$$\frac{5}{6} \div \frac{2}{5} =$$

$$\frac{9}{10} \div \frac{1}{3} =$$

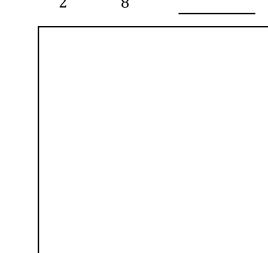
7th Grade - Readiness Standard 1 - 6.NS.1

Session 5: Guided Practice (We Do)

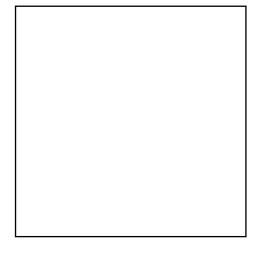
We Do Together: (Teacher Actions)

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

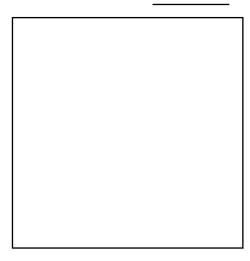
$$\frac{1}{2} \div \frac{1}{8} =$$



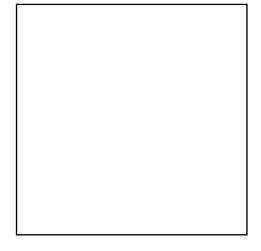
2.
$$\frac{1}{2} \div \frac{3}{4} =$$



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



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

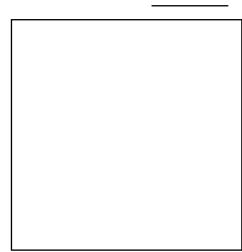


Session 5: Guided Practice (We Do Continued)

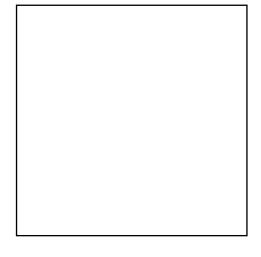
You Do Together: (As a class, or in small groups)

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

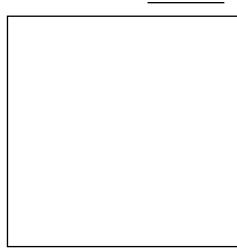
5.
$$\frac{3}{4} \div \frac{3}{8} =$$



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 5: Self-Reflection

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

Name_____ Date____

Learning Target: I will multiply and divide fractions.

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

$$\frac{3}{4} \times \frac{5}{6} =$$

$$\frac{1}{10} \times \frac{4}{9} =$$

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

$$\frac{2}{3} \div \frac{4}{5} = \underline{\hspace{1cm}}$$

$$\frac{3}{4} \div \frac{6}{7} =$$

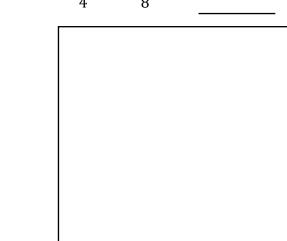
$$\frac{5}{9} \div \frac{1}{3} =$$

Session 6: Guided Practice (We Do)

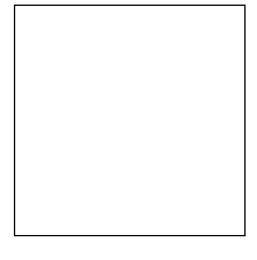
We Do Together: (Teacher Actions)

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

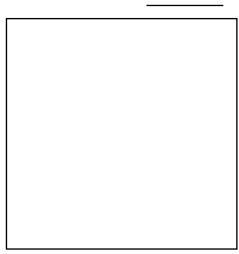
1.
$$\frac{1}{4} \div \frac{1}{8} =$$



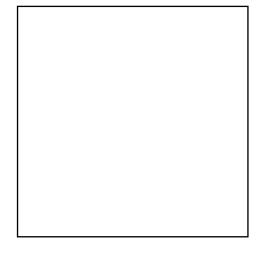
$$\frac{1}{2} \div \frac{5}{8} =$$



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



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

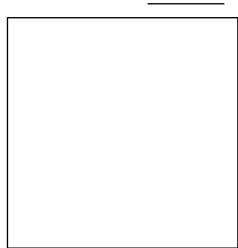


Session 6: Guided Practice (We Do Continued)

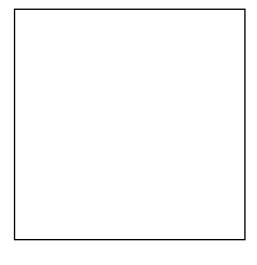
You Do Together: (As a class, or in small groups)

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

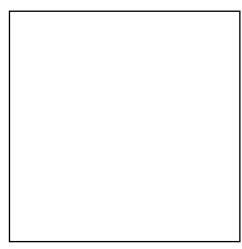
5.
$$\frac{3}{4} \div \frac{1}{2} =$$



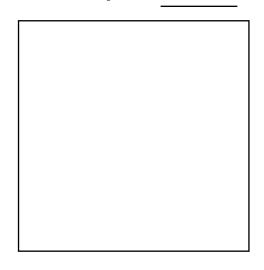
6.
$$\frac{2}{3} \div \frac{1}{2} =$$



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



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





Session 6: Self-Reflection

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

Name_____ Date____

Learning Target: I will multiply and divide fractions.

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

$$\frac{4}{5} \times \frac{1}{6} =$$

$$\frac{2}{5} \times \frac{7}{8} =$$

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

$$\frac{2}{5} \div \frac{5}{6} =$$

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

$$\frac{7}{8} \div \frac{2}{9} = \underline{\hspace{1cm}}$$



Name	Date	

7th Grade - Readiness Standard 1 - 6.NS.1

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.		
$\frac{1}{4} \div \frac{3}{12}$		
$\frac{2}{3} \div \frac{2}{15}$		



Name	Date

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

Name______ Date_____

Learning Target: I will multiply and divide fractions.

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

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

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

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

$$\frac{1}{4} \div \frac{5}{6} =$$

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

$$\frac{5}{6} \div \frac{2}{7} = \underline{\hspace{1cm}}$$



Name	Date

7th Grade - Readiness Standard 1 - 6.NS.1

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	

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

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

7th Grade - Readiness Standard 1 - 6.NS.1

Name_____ Date____

Learning Target: I will multiply and divide fractions.

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

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

$$\frac{7}{10} \times \frac{2}{5} =$$

$$\frac{2}{8} \times \frac{2}{4} =$$

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

$$\frac{5}{6} \div \frac{2}{5} =$$

$$\frac{9}{10} \div \frac{1}{3} =$$



Independent Practice (You Do)

7th Grade - Readiness Standard 1 - 6.NS.1

Learning	g Target: I will multiply and divide fractions	Readiness for solving 1-step algebraic equations
Title of 0	Game: Play "Multiplication and Division Match-up!"	
Number	of Players: 2	
Objectiv	ve: To match your answer cards to unknown problem cards.	
Materia	ls:	
> :	1 set of Problem and Answer cards per group	
> :	1 recording sheet per player	
Set-up:		
> 1	Deal all 10 Problem cards face down in a row.	
> 1	Deal 5 Answer cards face up to each player.	
Direction	ns:	
> 1	 Player 1 goes first Take a card from the row of face down Problem car Write the problem on the recording sheet And, find the answer in simplest form 	ds and turn it face up
> 1	If Player 1 has the Answer card, place it face up on top of th	e Problem card, take both cards and say:
	"The answer to is e	qual to"
> 1	If Player 1 does not have the answer to the Problem card, to	urn the Problem card back over.
> 1	Players 1 and 2 alternate turns. The winner is the first player	er to match all 5 of their cards.



Names	Date

7th Grade - Readiness Standard 1 - 6.NS.1

Independent Practice: Multiplication/Division Match-up! (Recording Sheet)			



Problem Cards (Set A)

7th Grade - Readiness Standard 1 - 6.NS.1

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.

	or each in a sealable bag for ea	en pan or stadents.	
$\frac{1}{2} \times \frac{1}{6}$	$\frac{1}{2} \div \frac{2}{3}$	$\frac{2}{3} \times \frac{3}{6}$	$\frac{1}{3} \div \frac{5}{6}$
$\frac{2}{3} \times \frac{1}{6}$	$\frac{1}{4} \div \frac{2}{5}$	$\frac{3}{4}$ x $\frac{4}{5}$	$\frac{3}{4} \div \frac{5}{6}$
Set A	Set A	Set A	Set A
$\frac{2}{5} \times \frac{3}{8}$	$\frac{2}{5} \div \frac{1}{8}$		
$\frac{1}{2} \times \frac{1}{6}$	$\frac{1}{2} \div \frac{2}{3}$	$\frac{2}{3}$ x $\frac{3}{6}$	$\frac{1}{3} \div \frac{5}{6}$
$\frac{2}{3} \times \frac{1}{6}$	$\frac{1}{4} \div \frac{2}{5}$	$\frac{3}{4}$ x $\frac{4}{5}$	$\frac{3}{4} \div \frac{5}{6}$
Set A	Set A	Set A	Set A
2 3 5 x 8	$\frac{2}{5} \div \frac{1}{8}$		
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$



Answer Cards (Set A)

7th Grade - Readiness Standard 1 - 6.NS.1

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.

	$\frac{1}{12}$ Set A	$\frac{3}{4}$	$\frac{1}{3}$	$\frac{2}{5}$
Set A ₁	1 9	<u>5</u> 8	3 5	9 10
	Set A	Set A	Set A	Set A
	$\frac{3}{20}$	$3\frac{1}{5}$		
	Set A	Set A		
	$\frac{1}{12}$	$\frac{3}{4}$	$\frac{1}{3}$	2 5
	Set A	Set A	Set A	Set A
Set A ₂	$\frac{1}{9}$	<u>5</u> 8	3 5	$\frac{9}{10}$
	Set A	Set A	Set A	Set A
	$\frac{3}{20}$	$3\frac{1}{5}$		
	Set A	Set A		



Problem Cards (Set B)

7th Grade - Readiness Standard 1 - 6.NS.1

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.

	$\frac{1}{2} \times \frac{5}{6}$	$\frac{2}{3} \div \frac{5}{6}$	$\frac{1}{3} \times \frac{9}{10}$	$\frac{1}{4} \div \frac{4}{5}$
Set B ₁	$\frac{3}{4}$ x $\frac{4}{5}$	$\frac{2}{3} \div \frac{8}{9}$	$\frac{3}{5}$ \times $\frac{5}{8}$	$\frac{5}{6} \div \frac{5}{9}$
	$\frac{5}{9} \times \frac{3}{10}$	$\frac{2}{9} \div \frac{3}{4}$		561.0
Set B ₂	$\frac{1}{2}$ \times $\frac{5}{6}$	$\frac{2}{3} \div \frac{5}{6}$	$\frac{1}{3}$ x $\frac{9}{10}$	$\frac{1}{4} \div \frac{4}{5}$
	$\frac{3}{4}$ \times $\frac{4}{5}$	$\frac{2}{3} \div \frac{8}{9}$	$\frac{3}{5}$ \times $\frac{5}{8}$	$\frac{5}{6} \div \frac{5}{9}$
	$\frac{5}{9} \times \frac{3}{10}$	$\frac{2}{9} \div \frac{3}{4}$		



Answer Cards (Set B)

7th Grade - Readiness Standard 1 - 6.NS.1

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.

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



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?	
Q4. What cull try:	
Q ₅ . Does my answer make sense?	
Q5. Dues my unswer muke sense:	