Fractions

Student Booklet

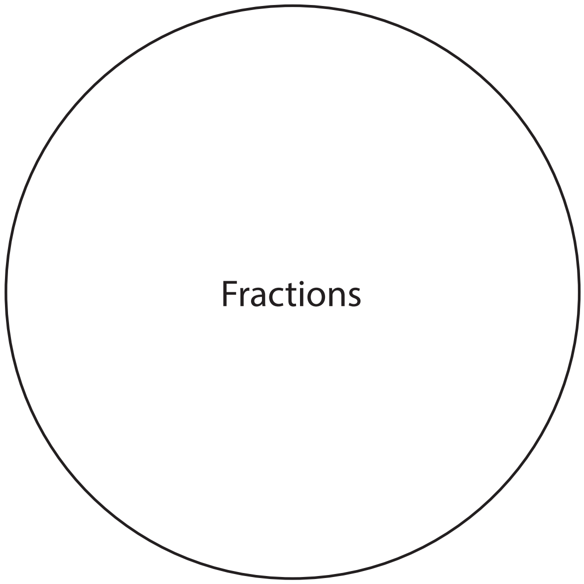
Name ________________________________

Teacher ________________________________

Period ________________________________

Name: ____________________

Warming Up:

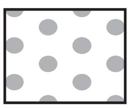


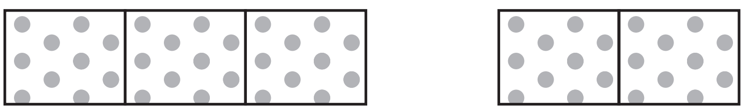
Name: ______________________________

Learning to Solve:

1.  = ____________________

How many sub-units are in the whole? _____

2.  = ____________________



How many iterations of the sub-unit? _____

How many iterations in the whole? _____

What is the unit fraction? _____

Name: ______________________________

Fraction Iteration Table

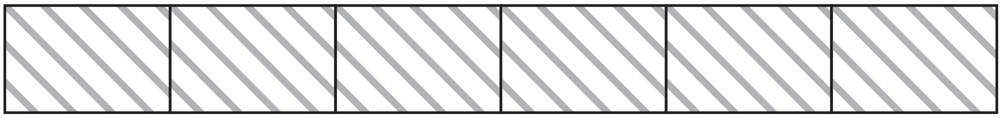
For each fraction, write the unit fraction and the number of times the unit fraction is iterated to create the given fraction.

Fraction	Unit Fraction	Number of Iterations
$\frac{2}{3}$		
$\frac{4}{7}$		
$\frac{5}{4}$		
$\frac{8}{9}$		
$1\frac{5}{6}$		

Name: ______________________________

Practicing Together:

Use this diagram, which represents one whole, to answer questions 1–3.



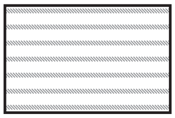
This diagram represents 1 whole.

1. Circle the sub-unit.

2. What unit fraction does the sub-unit represent? ______

3. How many times was the unit fraction iterated to create this whole? ______

Use this sub-unit to answer questions 4–5:



4. Create a whole, using this sub-unit iterated 4 times.

5. What is the unit fraction? ______

Name: ______________________________

6. Liz said, "If I want to create a length that is $2\frac{1}{4}$ units long, I would iterate the unit fraction $\frac{1}{4}$ 6 times." Do you agree with Liz? Why or why not?

a. Yes, I agree with Liz because $\frac{1}{4}$ is the unit fraction of $2\frac{1}{4}$.

b. Yes, I agree with Liz because $4 + 2 = 6$.

c. No, I disagree with Liz because $\frac{1}{4}$ must be iterated for each whole so it will be 8 iterations.

d. No, I disagree with Liz because $\frac{1}{4}$ must be iterated for each whole so it will be 9 iterations.

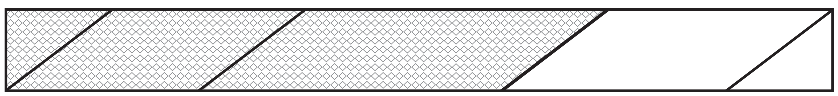
Name: ____________________________________

Trying It on Your Own

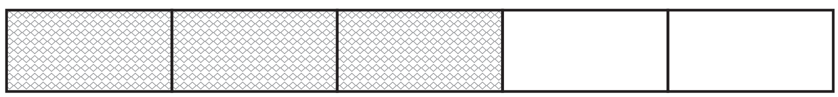
Solve the problems on your own.

1. Amanda is supposed to iterate a shape 5 times. After iterating the sub-unit 5 times, she colored in 3 regions to model the fraction $\frac{3}{5}$. Which of the following is correct?

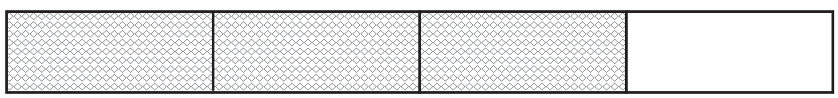
a.



b.



c.



d. All of the models represent $\frac{3}{5}$ because $\frac{3}{5}$ of the area of each rectangle is shaded.

2. Andrew said that $\frac{4}{10}$ is the unit fraction $\frac{1}{10}$ iterated 4 times. Do you agree with Andrew?

a. No, I do not agree with Andrew because the unit fraction is $\frac{1}{4}$.

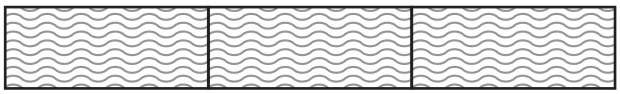
b. No, I do not agree with Andrew because the unit fraction is iterated 10 times.

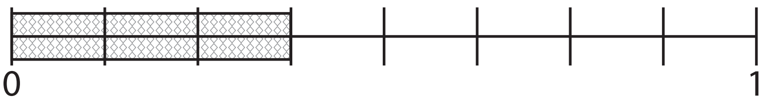
c. Yes, I agree with Andrew because that is the same as the unit fraction $\frac{2}{5}$ being iterated 2 times, which is $\frac{4}{10}$.

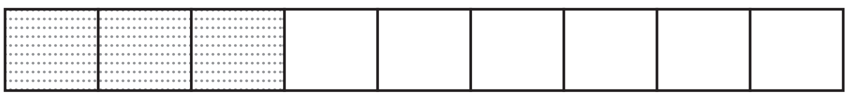
d. Yes, I agree with Andrew because the denominator of $\frac{4}{10}$ means that the unit fraction is $\frac{1}{10}$ and the numerator of 4 means there are 4 iterations of $\frac{1}{10}$.

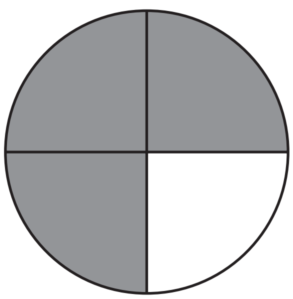
Name: ____________________

3. Julie has a ribbon that is $\frac{3}{8}$ of the size she needs to make a belt for her dress. Which model represents this situation?

a. 

b. 

c. 

d. 

4. Which fraction represents the unit fraction $\frac{1}{7}$ iterated 3 times?

a. $\frac{3}{21}$

b. $\frac{1}{21}$

c. $\frac{3}{7}$

d. $\frac{2}{7}$

Name: ____

Learning to Solve:

Sam woke up with a terrible stomachache. His mom came in to check on him and asked him why his stomach hurt. She said, "I noticed that only $\frac{1}{4}$ of my cherry pie is left. Is that why your stomach hurts?" Sam moaned, "Yes."

How much did Sam eat? ______

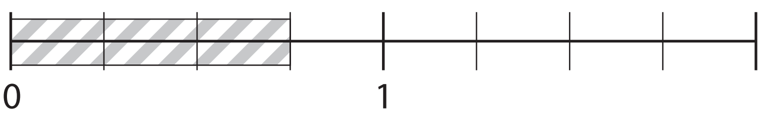
What is the unit fraction? ______

How many times is the unit fraction iterated to represent the amount of pie Sam ate?

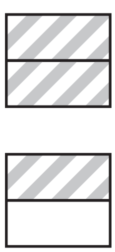
______

Name: ____

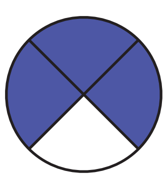
Look at each model and determine whether it correctly represents $\frac{3}{4}$.

1. 

Circle Yes or No	Write the reason for the answer you circled.
Yes No	

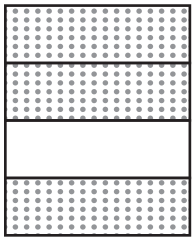
2. 

Circle Yes or No	Write the reason for the answer you circled.
Yes No	

3. 

Circle Yes or No	Write the reason for the answer you circled.
Yes No	

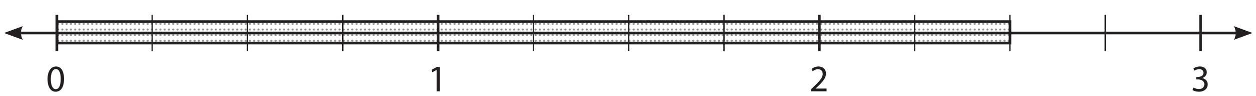
Name: ______________________________________

4. 

Circle Yes or No	Write the reason for the answer you circled.
Yes No	

5. Represent $\frac{5}{4}$ on the number line.

6. What fraction is represented on the number line? ______________



Name: ____

Practicing Together:

1. The length of a piece of lumber to be used in constructing a fence is $\frac{17}{12}$ feet.

A. Show the partitioning on this piece of lumber.

B. Circle the length of the board that you used as the whole.

C. What is another way to write $\frac{17}{12}$? ______

2. Tonya measured a piece of string for a necklace and it was $2\frac{3}{8}$ length units. Write this mixed number as an improper fraction.

Name: ____

3. On a table, Suzanna and Jonathan see equal-sized pieces of cake. Suzanna ate $2\frac{1}{3}$ pieces of cake. Jonathan ate $\frac{8}{3}$ pieces of cake.

Using the number line, represent the amount of cake Suzanna ate.

Using an area model, represent the amount of cake Jonathan ate.

Write $2\frac{1}{3}$ as an improper fraction: ______

Write $\frac{8}{3}$ as a mixed number: ______

4. Robyn said, "$\frac{11}{8}$ is the same $3\frac{3}{8}$." Do you agree with Robyn? Why or why not?

a. Yes, I agree with Robyn because $11 - 8 = 3$.

b. Yes, I agree with Robyn because 3 is the numerator and 8 is the denominator.

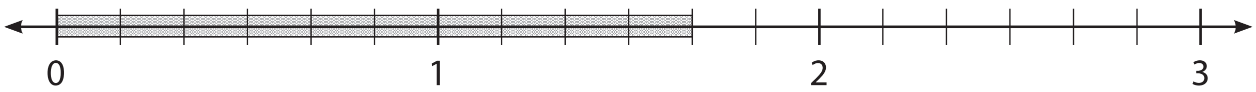
c. No, I disagree with Robyn because the fraction should be $\frac{1}{8}$.

d. No, I disagree with Robyn because because $\frac{8}{8}$ is 1 whole and $\frac{11}{8}$ is 1 whole and 3 more eighths.

Name: ____

Trying It on Your Own

1. Which fraction represents this model when the whole is the distance from 0 to 1?



a. $\frac{10}{12}$

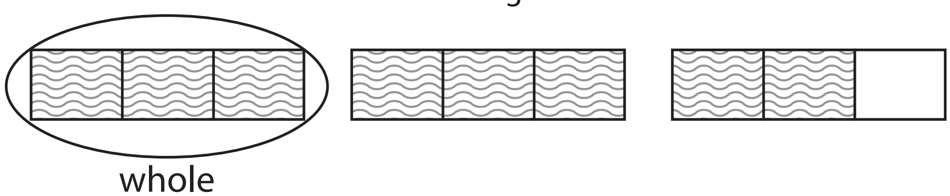
b. $\frac{10}{18}$

c. $\frac{10}{6}$

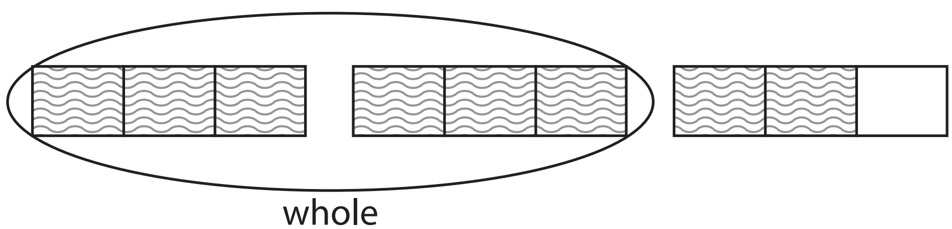
d. $1\frac{4}{10}$

2. Which model represents the fraction $2\frac{2}{3}$?

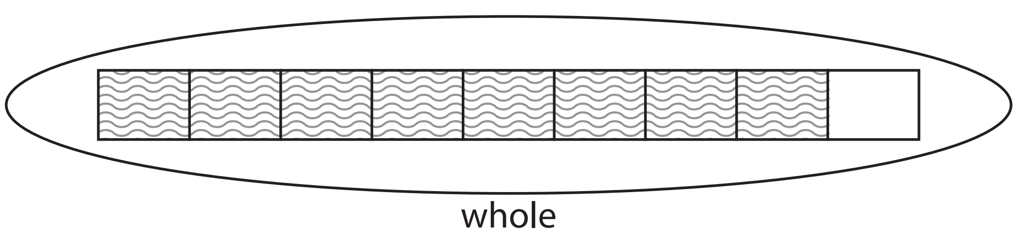
a.



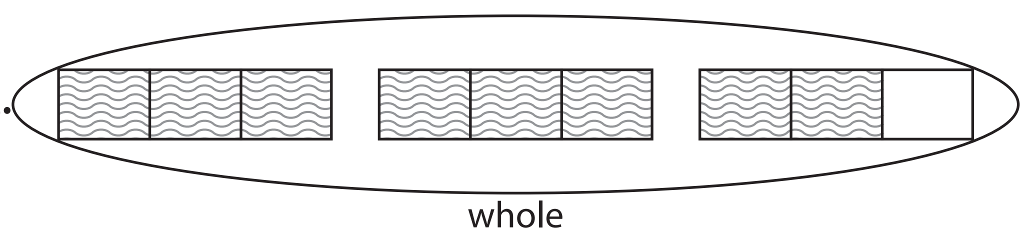
b.



c.



d.



Name: ____________________

3. Which statement is true?

a. Cory said that $3\frac{3}{4}$ is equal to $\frac{13}{4}$ because you multiply 3 by 3 and then add 4.

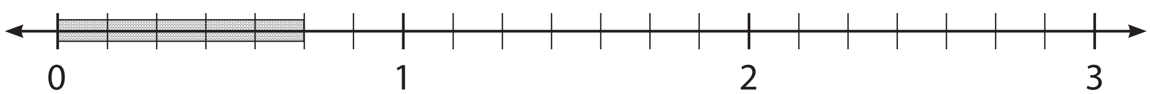
b. Sasha said that $3\frac{3}{4}$ is equal to $\frac{9}{4}$ because there are 3 three-fourths.

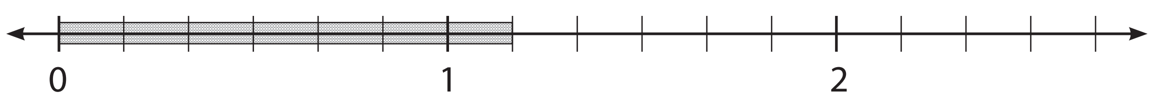
$\frac{3}{4} + \frac{3}{4} + \frac{3}{4} = \frac{9}{4}$

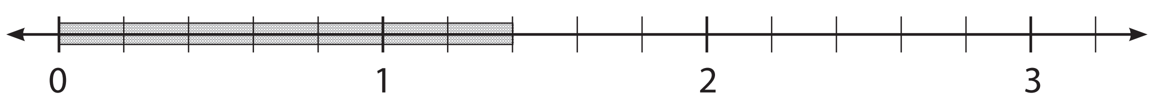
c. Al thinks that $3\frac{3}{4}$ is equal to $\frac{6}{4}$ because 3 + 3 = 6 and you put the 6 as the numerator and 4 stays the denominator.

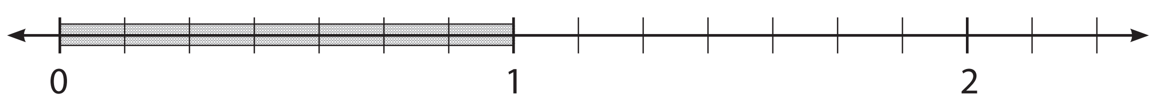
d. Paula thinks that $3\frac{3}{4}$ is equal to $\frac{15}{4}$ because the whole number 3 means there are 3 wholes and each whole is partitioned into 4 equal-sized parts. The 3 wholes are $\frac{12}{4}$ and then you add that to $\frac{3}{4}$, which equals $\frac{15}{4}$.

4. Which number line is partitioned correctly to represent the fraction $\frac{7}{5}$?

a.


b.


c.


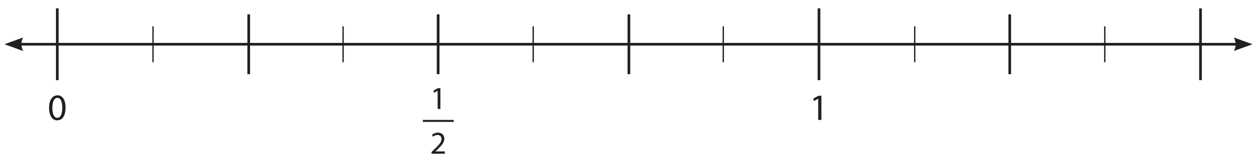
d.


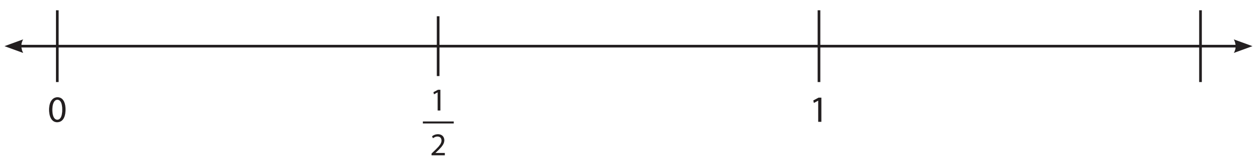
Name: ______________________________

Warming Up:

Name: ______________________________

Learning to Solve:





Place < or > in the blank.

$\frac{7}{9}$ ______ $\frac{9}{16}$

1. $\frac{2}{3}$ ______ $\frac{1}{16}$

2. $\frac{3}{11}$ ______ $\frac{7}{15}$

3. $\frac{5}{4}$ ______ $\frac{3}{7}$

Name: ______________________________

Practicing Together:

1. With your partner, sort each fraction according to whether it is closer to 0, $\frac{1}{2}$, or 1. Use the number line from the Learning to Solve to assist as needed.

When you finish, decide what patterns you notice about the fractions in the category.

Fractions closer to 0	Fractions closer to $\frac{1}{2}$	Fractions closer to 1
Describe what you notice about each group of fractions.		

Name: ____________________

2. Denise said, "$\frac{3}{8}$ is close to $\frac{1}{2}$" Do you agree with Denise?

a. No, because 3 is greater than 1 and 8 is greater than 2.

b. No, because $\frac{3}{8}$ is closer to 0.

c. Yes, because 1 is only 2 away from 3.

d. Yes, because 3 is almost half of 8.

Name: ______________________________

Trying It on Your Own

1. Charlie's teacher wrote that $\frac{4}{6} < \frac{10}{13}$. Which of Charlie's explanations is correct?

a. My teacher is incorrect. $\frac{4}{6}$ is greater than $\frac{10}{13}$ because one-sixth is a bigger piece than one-thirteenth.

b. My teacher is correct. $\frac{4}{6}$ is less than $\frac{10}{13}$ because $\frac{4}{6}$ is close to $\frac{1}{2}$ and $\frac{10}{13}$ is close to 1.

c. My teacher is correct. $\frac{4}{6}$ is less than $\frac{10}{13}$ because 10 is greater than 4 and 13 is greater than 6.

d. My teacher is incorrect. Both $\frac{4}{6}$ and $\frac{10}{13}$ are close to 1, so they are equal.

2. Which group of fractions are all closer to the benchmark fraction $\frac{1}{2}$ than to 0 or 1?

a. $\frac{3}{5}, \frac{5}{6}, \frac{3}{2}$

b. $\frac{1}{3}, \frac{2}{9}, \frac{6}{15}$

c. $\frac{1}{4}, \frac{1}{6}, \frac{1}{8}$

d. $\frac{3}{6}, \frac{5}{8}, \frac{3}{7}$

Name: ______________________________

3. Which statement correctly shows the comparison between $\frac{4}{7}$ and $\frac{5}{12}$?

a. $\frac{4}{7} > \frac{5}{12}$

b. $\frac{4}{7} < \frac{5}{12}$

c. $\frac{4}{7} = \frac{5}{12}$

d. None of the above.

4. Which group of fractions are all closer to the benchmark fraction 0 than to $\frac{1}{2}$ or 1?

a. $\frac{3}{4}, \frac{5}{6}, \frac{3}{2}$

b. $\frac{1}{3}, \frac{2}{9}, \frac{6}{15}$

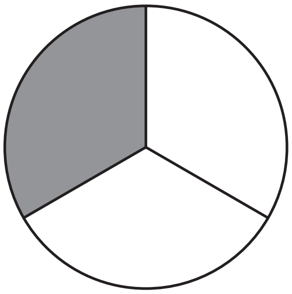
c. $\frac{4}{47}, \frac{1}{5}, \frac{2}{15}$

d. $\frac{3}{6}, \frac{5}{8}, \frac{3}{7}$

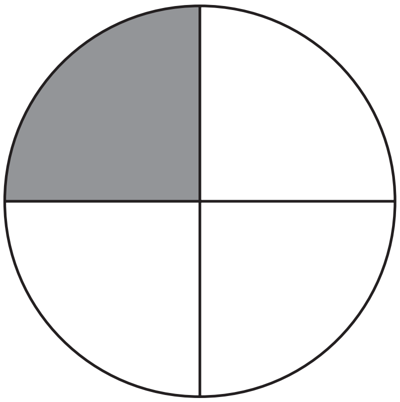
Name: ____________________

Warming Up:

House of Pizza



$\frac{1}{3}$ of a small pizza



$\frac{1}{4}$ of a large pizza

Name: ____________________________________

Learning to Solve:

1. Which piece is larger: $\frac{1}{5}$ of a large pizza from House of Pizza or $\frac{1}{6}$ of a large pizza from House of Pizza?

2. Compare $\frac{2}{3}$ of a medium pizza and $\frac{2}{9}$ of a medium pizza from House of Pizza.

3. Compare the fractions.

$\frac{5}{3}$ ______ $\frac{5}{2}$

Name: ____

Practicing Together:

You may use Cuisenaire rods or an area model to answer the questions.

1. You are given the fraction $\frac{4}{7}$. Draw or model a representation of a fraction that has the same numerator but is greater than $\frac{4}{7}$.

$\frac{4}{7} <$ ______________

2. You are given the fraction $\frac{7}{4}$. Draw a representation of a fraction that has the same numerator but is smaller than $\frac{7}{4}$.

$\frac{7}{4} >$ ______________

3. Marty said, "$\frac{5}{6}$ is less than $\frac{7}{8}$." Do you agree with Marty? Why or why not?

a. Yes, I agree with Marty because $\frac{7}{8}$ is closer to 1.

b. Yes, I agree with Marty because $7 > 5$ and $8 > 6$.

c. No, because both fractions are only 1 piece away from 1 so they are equal.

d. No, because the unit fraction $\frac{1}{6}$ is greater than the unit fraction $\frac{1}{8}$.

Name: ______________________________

Trying It on Your Own

1. Which fraction is the smallest: $\frac{3}{8}$, $\frac{3}{4}$, $\frac{3}{9}$, or $\frac{3}{2}$?

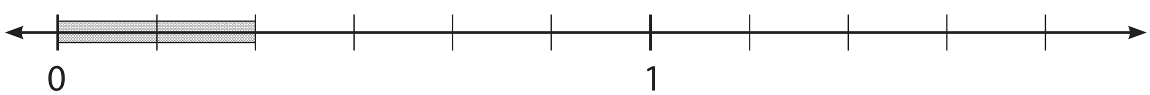
a. $\frac{3}{8}$

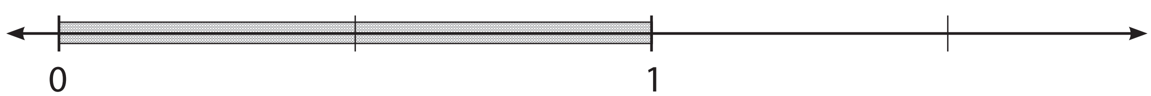
b. $\frac{3}{4}$

c. $\frac{3}{9}$

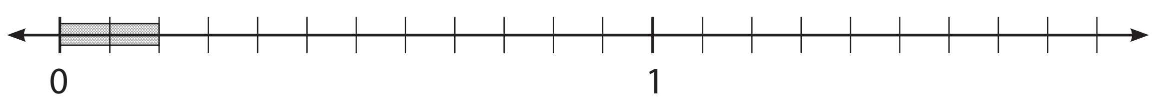
d. $\frac{3}{2}$

2. Sandra drew representations of fractions that she thinks are greater than $\frac{2}{3}$ and that have the same numerator. Which representation is correct?

a. 

b. 

c. 

d. 

Name: ______________________________

3. Which answer shows the correct comparison of $\frac{9}{4}$ and $\frac{9}{7}$?

a. $\frac{9}{4} < \frac{9}{7}$

b. $\frac{9}{4} > \frac{9}{7}$

c. $\frac{9}{4} = \frac{9}{7}$

d. None of the above.

4. Which fraction is the smallest: $\frac{6}{8}$, $\frac{6}{3}$, $\frac{6}{10}$, or $\frac{6}{5}$?

a. $\frac{6}{8}$

b. $\frac{6}{5}$

c. $\frac{6}{10}$

d. $\frac{6}{3}$

Name: ______________________________________

Wrapping It Up

Can you think of a way that we could generalize how to compare fractions with the same numerator instead of using Cuisenaire rods or other models?

For example: Which fraction is greater, $\frac{6}{25}$ or $\frac{6}{30}$? ______

How would you decide without making a model?

Name: ________________________________

Learning to Solve:

Use benchmark fractions to compare the distances ran.

Brad, Denise, and Sharla have been practicing their running every day after school. Today during gym class, Brad ran $\frac{7}{6}$ miles, Denise ran $\frac{5}{3}$ miles, and Sharla ran $\frac{4}{5}$ miles. Their gym teacher wants to place the students in order from the longest distance ran to the shortest distance ran. How can you help the teacher organize these distances?

What is the whole in this problem? ____________________

Brad ran _____ miles.

Which benchmark fraction is $\frac{7}{6}$ closest to? _____

Denise ran _____ miles.

Which benchmark fraction is $\frac{5}{3}$ closest to? _____

Sharla ran _____ mile.

Which benchmark fraction is $\frac{4}{5}$ closest to? _____

Order of the fractions from the longest distance to the shortest distance ran:

____

What are the names of the students in order from the longest distance ran to the shortest distance ran? ______________________________

Name: ______________________________

Practicing Together:

You may use number lines or benchmark fractions to order and compare the fractions.

1. The heights of decorative bricks at the garden center are $\frac{2}{3}$ of a foot, $\frac{5}{8}$ of a foot, and $\frac{6}{7}$ of a foot. Put the height of the bricks in order from least to greatest.

What is the whole? ____________________

Write each fraction as an iteration of the unit fraction.

Fraction	Iteration

Write the order of brick height from least to greatest. ____________________

Name: ____________________________________

2. Jenna, Andy, Brian, and Dawn ran more than a mile yesterday. Jenna ran $\frac{7}{6}$ miles, Andy ran $\frac{4}{3}$ miles, Brian ran $\frac{3}{2}$ miles, and Dawn ran $\frac{12}{6}$ miles.

Fraction	Iteration

Put the distances in order from least to greatest.

Explain your answer.

Name: ____________________________________

3. Carlie ordered a set of fractions from greatest to least.

$$\frac{11}{10}, \frac{3}{5}, \frac{1}{4}$$

Do you agree with her order? Why or why not?

a. Yes, I agree with the order because the numerators and denominators are in the right order.

b. Yes, I agree with her order because $\frac{11}{10}$ is close to 1, $\frac{3}{5}$ is close to 1/2, and $\frac{1}{4}$ is close to 0.

c. No, I disagree with her order because $\frac{1}{4}$ is 3 away from 1 whole and $\frac{3}{5}$ is 2 away from 1 whole.

d. No, I disagree with her order because $\frac{11}{10}$ is only $\frac{1}{10}$ away from a whole.

Name: ____________________

Trying It on Your Own

1. Savannah, Patrick, Jonathan, and Amie were told to order this set of fractions: $\frac{4}{5}, \frac{1}{6}, \frac{5}{8}, \frac{2}{3}$ from least to greatest. Which student has the correct answer and correct explanation?

a. Savannah said that the correct order is $\frac{1}{6}, \frac{2}{3}, \frac{4}{5}, \frac{5}{8}$ because the numerators are in order from least to greatest.

b. Patrick said that the correct order is $\frac{1}{6}, \frac{5}{8}, \frac{2}{3}, \frac{4}{5}$ because $\frac{1}{6}$ is close to 0, so it is least; $\frac{5}{8}$ is close to $\frac{1}{2}$, so it is next; and $\frac{2}{3}$ and $\frac{4}{5}$ are both close to 1, but $\frac{4}{5}$ is larger than $\frac{2}{3}$ because there is only $\frac{1}{5}$ of the whole not shaded.

c. Jonathan said that the correct order is $\frac{1}{6}, \frac{5}{8}, \frac{4}{5}, \frac{2}{3}$ because $\frac{1}{6}$ is close to 0, so it is least; $\frac{5}{8}$ is close to $\frac{1}{2}$, so it is next; and $\frac{2}{3}$ and $\frac{4}{5}$ are both close to 1, but $\frac{2}{3}$ is greater than $\frac{4}{5}$.

d. Amie said that the correct order is $\frac{5}{8}, \frac{1}{6}, \frac{4}{5}, \frac{2}{3}$ because the largest number in the denominator means that the parts of the whole are smaller, so $\frac{5}{8}$ would be the least fraction.

2. Order these fractions from greatest to least: $\frac{3}{7}, \frac{3}{4}, \frac{1}{9}, \frac{1}{6}$

a. $\frac{3}{7}, \frac{3}{4}, \frac{1}{9}, \frac{1}{6}$

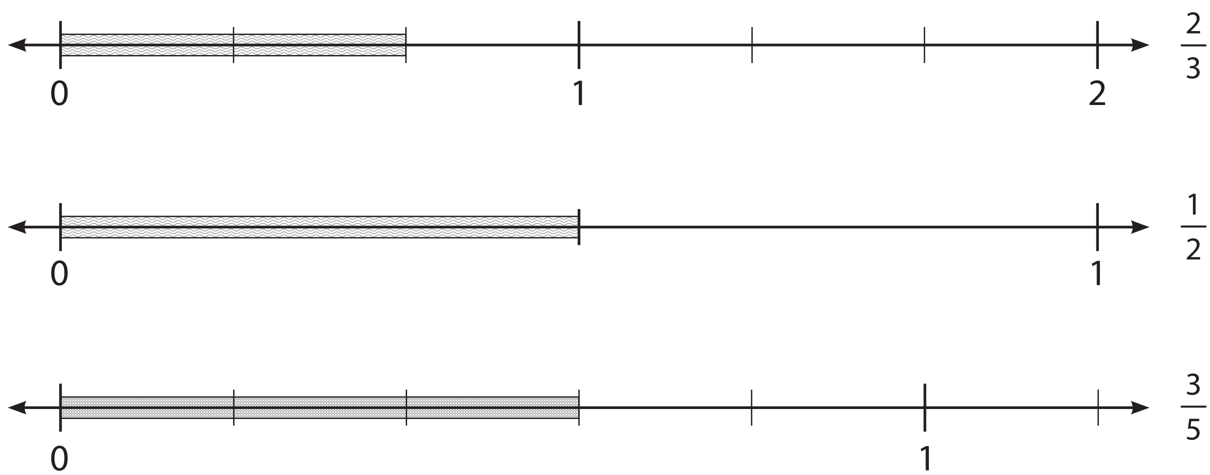
b. $\frac{1}{9}, \frac{1}{6}, \frac{3}{7}, \frac{3}{4}$

c. $\frac{3}{4}, \frac{3}{7}, \frac{1}{6}, \frac{1}{9}$

d. $\frac{1}{6}, \frac{1}{9}, \frac{3}{4}, \frac{3}{7}$

Name: ______________________________

3. Sandra drew these representations of fractions. Which comparison below is correct?



a. $\frac{2}{3}$ is less than $\frac{1}{2}$ and $\frac{3}{5}$, which are equal.

b. $\frac{1}{2}$ is equal to $\frac{3}{5}$.

c. The order of these fractions from least to greatest is $\frac{2}{3}$, $\frac{1}{2}$, $\frac{3}{5}$ because they are represented on the number line, using the whole from 0 to 1.

d. The order of these fractions cannot be determined because the whole is not the same.

Name: ____________________________________

4. Select the correct comparison relationship and explanation for $\frac{5}{6}$ and $\frac{3}{8}$.

a. $\frac{5}{6}$ is less than $\frac{3}{8}$ because the denominator of 6 is less than the denominator of 8.

b. $\frac{3}{8}$ is less than $\frac{5}{6}$ because 8 – 3 is 5 parts remaining from $\frac{3}{8}$ and 6 – 5 is only 1 part remaining from $\frac{5}{6}$.

c. $\frac{5}{6}$ is greater than $\frac{3}{8}$ because the numerator 5 is greater than the numerator 3.

d. $\frac{5}{6}$ is greater than $\frac{3}{8}$ because $\frac{5}{6}$ is close to 1 and $\frac{3}{8}$ is close to $\frac{1}{2}$, which is smaller than 1.

Name: ______________________________

Wrapping It Up

Help the teacher grade the assignment. The students were told to order the fractions from greatest to least. Explain whether the order is correct and why.

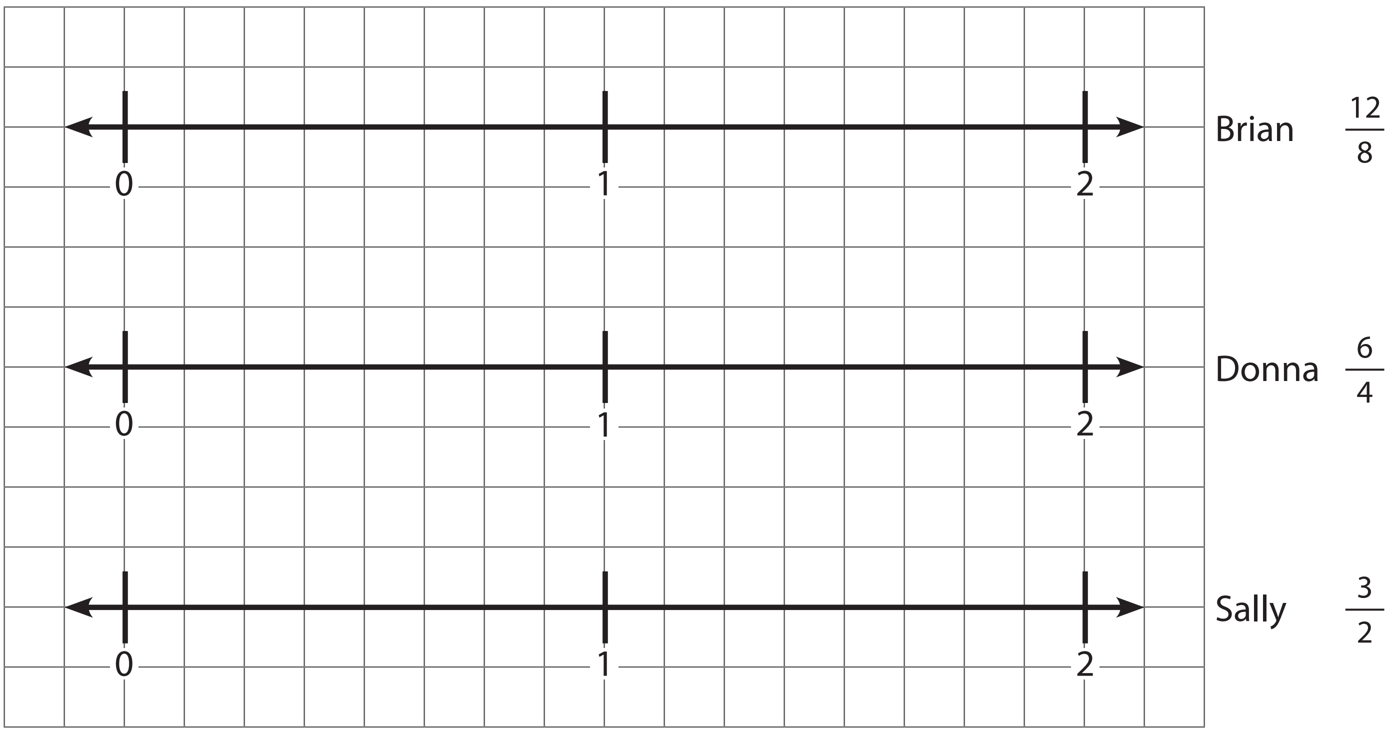
Ordered set of fractions	Explanation of whether the order is correct and why
$\frac{10}{3}, \frac{8}{3}, \frac{5}{3}, \frac{4}{3}$	
$\frac{7}{2}, \frac{7}{4}, \frac{7}{5}, \frac{7}{6}$	

Name: ____________________________________

Warming Up:

Brian, Donna, and Sally finished an after-school run. They ran the following distances in the same amount of time: Brian ran $\frac{12}{8}$ of a mile, Donna ran $\frac{6}{4}$ of a mile, and Sally ran $\frac{3}{2}$ of a mile.

What is the whole in this problem? ____________________



Name: ____________________

Learning to Solve:

Find-a-Place Game Directions

1. You will play in pairs. The person on the left is Player A. The person on the right is Player B.

2. The goal of the game is to create a fraction, using the digits 0 through 9, that is as close as possible to the fraction in the center of the page.

3. To create the fractions, I will draw a card from this deck and show it to you. The deck contains the 2 through 9 cards. The 10 card represents 0 and the ace represents 1. There are 4 of each number in the deck.

4. The first card I draw will be for Player A. Player A may put the number on the card in any numerator or denominator that is blank on his or her side of the game sheet. Once I draw the card, it will not be drawn again.

5. Player B will get the next card. That player will place the number in any numerator or denominator on his or her side of the game sheet.

6. I will keep drawing cards until all of the blanks are filled.

7. Once you place a number in a box, you may not change the number or move it.

8. You must play the number on your turn. In other words, you cannot save the number and play it later.

Scoring Directions

1. To score, you and your partner will decide who created the fraction that is closer to the number in the middle.

2. The player who created the fraction closest to the number in the middle receives 1 point.

3. If you are equally close to the number, you both receive a point.

4. If you created a fraction that has a 0 as the denominator, the other person automatically gets a point.

5. The person with the most points wins.

Name: ____________________________________

FIND A PLACE

(2 Players)

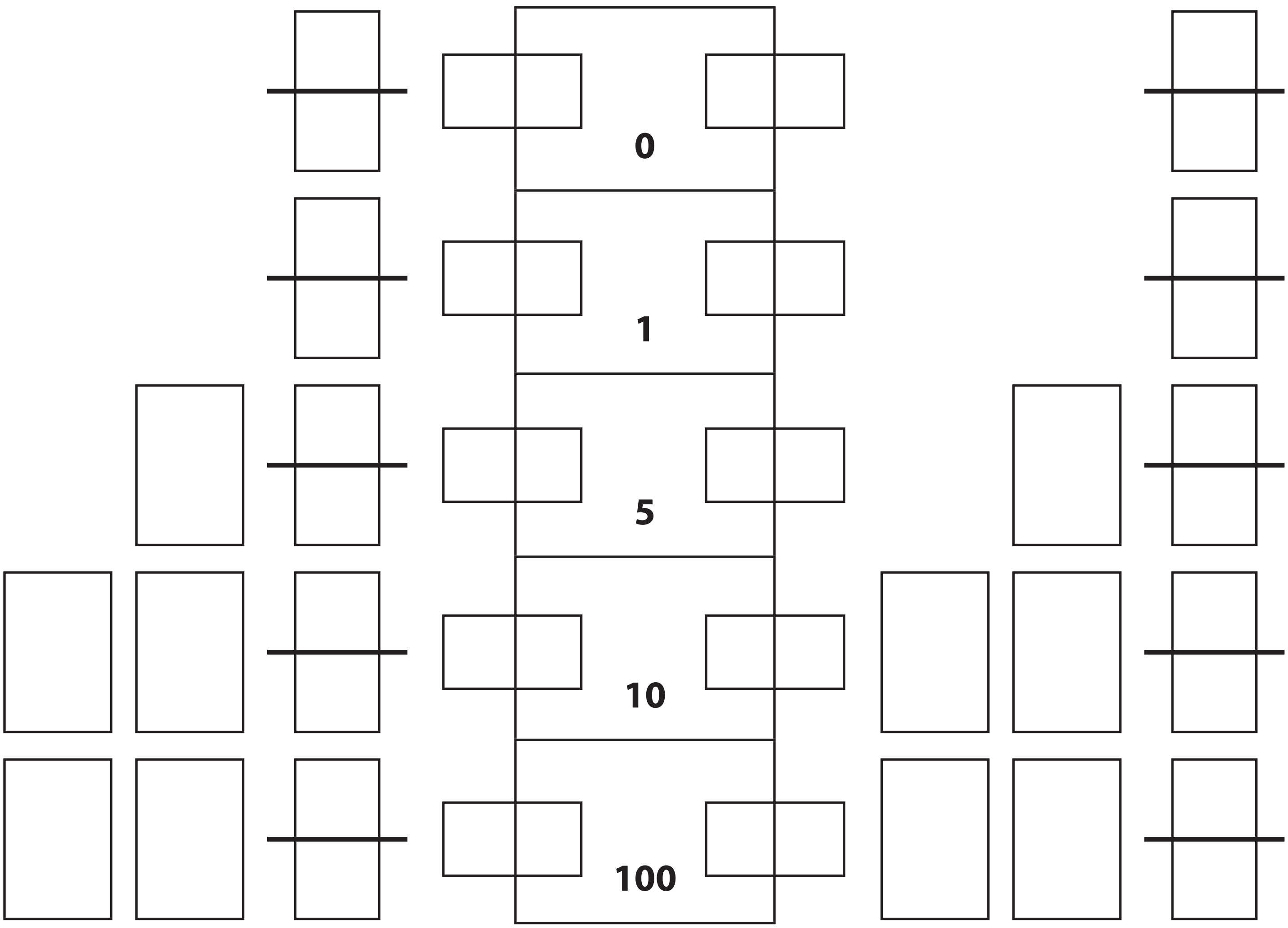
Use 40 cards numbered 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 *(four or each)*

Player A

Player B

Score

Score



Player A's Total Score

Player B's Total Score

Dougherty, B. J. (2004). *Find-a-place: Fractions*. Developed at the Curriculum Research & Development Group, University of Hawaii.

Name: ______________________________

Trying It on Your Own

1. Ayallah tried to decide which benchmark fraction (0, $\frac{1}{2}$, 1) that $\frac{8}{13}$ is closest to. Which statement gives correct reasoning?

a. $\frac{8}{13}$ is closest to 0 because there are only 5 units from 8 to 13.

b. $\frac{8}{13}$ is closest to $\frac{1}{2}$ because 8 is close to half of 13.

c. $\frac{8}{13}$ is closest to 1 because 8 is almost 13.

d. $\frac{8}{13}$ is greater than 1 because 13 is greater than 8.

2. Which choice is the correct order from greatest to least for this set of fractions:

$$\frac{4}{5}, \frac{4}{9}, \frac{3}{8}, \frac{5}{7}$$

a. $\frac{5}{7}, \frac{4}{5}, \frac{4}{9}, \frac{3}{8}$

b. $\frac{4}{5}, \frac{5}{7}, \frac{4}{9}, \frac{3}{8}$

c. $\frac{3}{8}, \frac{4}{5}, \frac{4}{8}, \frac{5}{7}$

d. $\frac{4}{5}, \frac{5}{7}, \frac{3}{8}, \frac{4}{9}$

Name: ______________________________

3. Which fraction is equivalent to $\frac{3}{9}$?

a. $\frac{1}{6}$

b. $\frac{6}{9}$

c. $\frac{5}{18}$

d. $\frac{9}{27}$

4. The students were told to order the following fractions from least to greatest: $\frac{5}{6}, \frac{5}{3}, \frac{5}{19}, \frac{5}{7}$. Which answer shows these fractions in correct order from least to greatest?

a. $\frac{5}{19}, \frac{5}{7}, \frac{5}{6}, \frac{5}{3}$

b. $\frac{5}{3}, \frac{5}{6}, \frac{5}{7}, \frac{5}{19}$

c. $\frac{5}{6}, \frac{5}{7}, \frac{5}{19}, \frac{5}{3}$

d. $\frac{5}{19}, \frac{5}{3}, \frac{5}{6}, \frac{5}{7}$

Name: ____

Learning to Solve:

1. Heather has been given $\frac{2}{4}$ of the garden to plant her vegetables. Shade $\frac{2}{4}$ of the garden to indicate Heather's area.

Heather wants to share her $\frac{2}{4}$ of the garden with 5 friends.

How many parts does she need to split the whole garden into so that all 6 of them get the same amount of the garden? ___________

Write the fraction that is equivalent to Heather's $\frac{2}{4}$ of the garden: ______

How much of the garden will Heather and each of her friends get? ______

2. Compare $\frac{2}{4}$ and $\frac{6}{12}$.

Name: ______________________________

3. Write a fraction that is equivalent to $\frac{2}{3}$. Explain how you found your equivalent fraction.

Name: ____

Practicing Together:

1. The Concentration Game

Play the Concentration game using the cards with the following fractions, $\frac{1}{2}$, $\frac{4}{8}$, $\frac{2}{5}$, $\frac{5}{6}$, $\frac{4}{10}$, $\frac{3}{8}$, $\frac{6}{16}$, $\frac{5}{8}$, $\frac{10}{12}$, $\frac{7}{8}$, $\frac{3}{4}$, $\frac{9}{12}$, $\frac{10}{16}$, $\frac{21}{24}$, $\frac{3}{2}$, and $\frac{9}{6}$.

Shuffle the deck of cards and place them face down (so the fractions are hidden, with four rows of four cards). The partner who did not deal goes first and flips a card over (fraction facing up). A second card is then flipped over. If the two cards are equivalent fractions (for example, $\frac{1}{2}$ and $\frac{2}{4}$ or $\frac{10}{12}$ and $\frac{5}{6}$), the player takes the cards and makes a pile and then goes again. If the two fractions are not equivalent (for example, $\frac{1}{2}$ and $\frac{9}{12}$), the cards are turned back over and it's the next person's turn. Play until all cards are used, and the person with the most cards at the end of the game is the winner.

2. Is $\frac{2}{3} = \frac{6}{12}$ a true statement? Are these 2 fractions equivalent? Why or why not? Explain how you know.

Name: ____

3. "What is a fraction equivalent to $\frac{8}{12}$?" asked Mark. Which of the following is an accurate statement?

a. $\frac{6}{10}$ because you subtract 2 from the numerator and 2 from the denominator.

b. $\frac{24}{36}$ because you multiple by $\frac{3}{3}$

c. $\frac{40}{60}$ because you multiply by 5

d. $\frac{10}{14}$ because you add 2 to the numerator and denominator

Name: ______________________________

Trying It on Your Own

1. Marissa said that $\frac{2}{5} = \frac{6}{9}$. Is she correct?

a. Yes, because when you add 4 to the numerator and denominator of $\frac{2}{5}$, that is equal to $\frac{6}{9}$.

b. Yes, because when you subtract the 5 and 2 of $\frac{2}{5}$, the difference is 3, and when you subtract the 9 and 6 of $\frac{6}{9}$, the difference is also 3.

c. No, because $\frac{2 \times 3}{5 \times 3}$ does not equal $\frac{6}{9}$.

d. Yes, because both fractions are close to $\frac{1}{2}$.

2. Which fraction is equivalent to $\frac{3}{4}$?

a. $\frac{6}{7}$

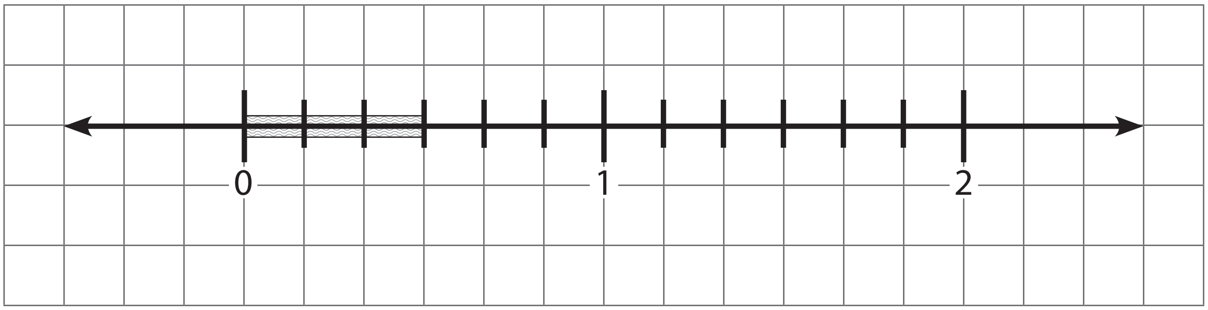
b. $\frac{15}{20}$

c. $\frac{7}{8}$

d. $\frac{4}{5}$

Name: ______________________________

3. Zack drew a number line model to represent $\frac{1}{2} = \frac{3}{6}$. The whole is the distance from 0 to 1. What mistake did Zack make when he drew his model?



a. Zack drew a representation for $\frac{1}{4}$.

b. Zack drew a representation of $\frac{3}{7}$.

c. Zack did not make a mistake.

d. Zack partitioned the whole into twelfths.

4. Is $\frac{20}{24}$ equivalent to $\frac{5}{6}$?

a. No. If you divide the numerator and denominator by 2, the equivalent fraction is $\frac{10}{12}$.

b. Yes. 20 and 24 have a common denominator of 4.

c. Yes. If you subtract 15 from 20, the answer is 5 and if you subtract 18 from 24, the answer is 6.

d. No. 20 and 24 do not have a common factor.

Name: ______________________________

Wrapping It Up

Adrienne and some classmates are running a relay race. The race is 1 mile. If Adrienne and her classmates each run $\frac{1}{6}$ of the relay race, how many classmates are running with Adrienne?

Answer the following questions:

What is the whole? ____________________

Draw a representation of the problem and label the parts as we did in Learning to Solve.

Based on your model, what fraction is equivalent to $\frac{1}{3}$? _____

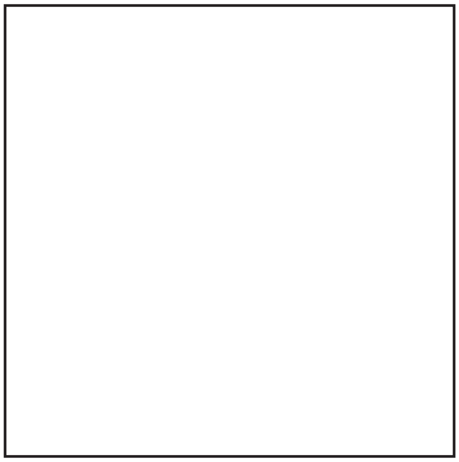
Write the mathematical compare statement showing how these 2 fractions are equivalent.

How many classmates are running with Adrienne? ____________________

Name: ____________________________________

Learning to Solve:

1.



What is the whole? ____________________

After the first partitioning, what is the fractional part? _____

Now, what is the fractional part? _____

After the last partitioning, what is the fractional part? _____

Name: ____________________

2. Using any method you choose, find 4 fractions that are equivalent to $\frac{1}{2}$.

Write these 4 fractions in the $\frac{1}{2}$ column.

Equivalent Fractions	
$\frac{1}{2}$	$\frac{3}{4}$

3. Find 4 fractions that are equivalent to $\frac{3}{4}$. Write these 4 fractions in the second column of the table.

4. The whole is the area of the rectangle. Partition the whole to show 2 fractions equivalent to $\frac{3}{4}$.

Name: ____________________

5. Complete the table.

Fraction	**Process of Simplifying**	**Simplified Fraction**
$\frac{5}{10}$		
$\frac{6}{14}$		
$\frac{9}{15}$		
$\frac{10}{6}$		
$\frac{12}{16}$		

Name: ________________________________

Practicing Together:

Distribute the pattern blocks to each pair of students. Review the fractional amount each block represents, holding up each block as you describe it. Ask them to find as many combinations of patterns that they can that show 1. They should write the equations in their Student Booklet.

Name: ________________________________

Trying It on Your Own

1. Which fraction is in simplest form?

a. $\frac{4}{15}$

b. $\frac{2}{6}$

c. $\frac{5}{10}$

d. $\frac{8}{4}$

2. Sammi said that $\frac{6}{9}$ is in simplest form. Is she correct?

a. Yes, because 6 and 9 cannot be divided by a common factor.

b. Yes, because you cannot divide 6 and 9 by the factor 2.

c. No, because you can subtract 3 from both 6 and 9 and you will get the fraction $\frac{3}{6}$.

d. No, because 6 and 9 have a common factor of 3.

Name: ______________________________

3. Can a fraction in simplest form have an even number in both the numerator and denominator? Which explanation is correct?

a. Yes, because sometimes the numerator and denominator won't have any factor in common.

b. No, because all even numbers are divisible by 2, which would be a common factor.

c. Yes, because you can only factor an even number 1 time.

d. No, because you can always subtract 2 from an even number.

4. Which fraction is not in simplest form?

a. $\frac{5}{8}$

b. $\frac{3}{2}$

c. $\frac{7}{9}$

d. $\frac{8}{14}$

Name: ______________________________

Wrapping It Up

Miguel said, "I made a fraction equivalent to $\frac{2}{3}$ by adding 3 to the numerator and denominator. $\frac{2}{3} = \frac{5}{6}$." Do you agree with Miguel? Why or why not?

Name: ______________________________

Warming Up:

1. ***Directions:***

1. You are going to play the Factor Game. This is a two-person game, Player A and Player B. Decide now who will be Player A and who will be Player B. The object of the game is to get as many points as you can to win the game. To show how the game is played, to start, the teacher is Player A and the class is Player B for this first game.

2. Look at the numbers 1 to 30 on the Factor Game Board. Each number will be used only one time during the game, but some numbers may not be used at all.

3. Player A first selects one number from 1 to 30 from the Factor Game Board and circles it using a colored marker. In this case, Player A selects the number 6, which is circled on the game board and also is written in the Player A Score column of the Factor Game Record Sheet.

4. Now it's Player B's turn, who identifies factors of 6 and circles the factors using his or her marker and also writes them in the Factor column of the record sheet. Because any number times 1 equals that number, 1 is circled and written. Are there any other factors of 6? Yes, 3 and 2 are also factors of 6; so Player B circles 3 and 2 on the game board and writes the numbers next to the 1 in the Factor column of the record sheet. Because $1 + 3 + 2 = 6$, a 6 is written in the Player B Score column.

5. Play continues until no two numbers remain on the game board that can be multiplied together to form a product that matches the number chosen.

6. Once there are no more factors available, each person determines the point total by adding the numbers in his or her column of the record sheet. The winner is the person with the most points. If more than one game is played, players alternate who goes first, while maintaining their role as Player A or B.

Name: ____________________

Learning to Solve:

1. $\frac{5}{6} - \frac{3}{6} =$ ______

2. $\frac{7}{6} + \frac{3}{6} =$ ______

3. The length of a board to be used for a fence is $3\frac{5}{12}$ feet. The board is too long. The landscape designer removes $1\frac{1}{12}$ feet from the board. What is the length of the board now? Be able to explain how you arrived at your solution or show a model that represents the problem.

Model

Write the answer in simplest terms.

Name: ____________________________________

Practicing Together:

Answer the questions for each problem.

$\frac{16}{10} - \frac{8}{10} =$

1. What is the unit fraction? ______

2. For $\frac{16}{10}$, how many times is the unit fraction iterated? ______

3. For $\frac{8}{10}$, how many times is the unit fraction iterated? ______

4. What is the total remaining number of iterations? ______

5. What is the difference of these fractions? ______

Find the sums.

6. $2\frac{2}{7} + \frac{1}{7} =$

7. $\frac{11}{14} + \frac{8}{14} =$

Name: ______________________________

8. Gary added $\frac{8}{3} + 1\frac{2}{3}$. Which of the following describes the sum Gary should get?

a. Gary should get $\frac{11}{3}$ because you add 8 + 1 + 2.

b. Gary should get $4\frac{1}{3}$ because $1\frac{2}{3}$ is the same as $\frac{5}{3}$. $\frac{5}{3} + \frac{8}{3} = 4\frac{1}{3}$.

c. Gary should get 4 because $\frac{8}{3}$ is $2\frac{1}{3}$. $2\frac{1}{3} + 1\frac{2}{3} = 4$.

d. Gary should get $\frac{13}{6}$ because $1\frac{2}{3}$ is the same as $\frac{5}{3}$. $\frac{5}{3} + \frac{8}{3} = \frac{13}{6}$.

Name: ______________________________

Trying It on Your Own

1. Robert and Ed are having a disagreement over the sum of $\frac{5}{6} + \frac{2}{6}$. Robert said that the sum is $1\frac{1}{6}$, but Ed said that the sum is $\frac{7}{6}$. Who is correct and why?

a. Only Robert is correct because $\frac{5}{6}$ is close to 1 and $\frac{2}{6}$ would be just a little over 1.

b. Only Ed is correct because when you add 5 and 2, the sum is 7.

c. Robert and Ed are both correct. When you add $\frac{5}{6}$ and $\frac{2}{6}$, the sum is $\frac{7}{6}$ and $\frac{7}{6}$ is equivalent to the mixed number $1\frac{1}{6}$.

d. Robert and Ed are both wrong. When you add $\frac{5}{6}$ and $\frac{2}{6}$, the sum is $\frac{7}{12}$.

2. The difference of $\frac{9}{13} - \frac{3}{13}$ results in the unit fraction being iterated how many times?

a. 12

b. 6

c. 13

d. 3

Name: ______________________________

3. $3\frac{2}{6} + 7\frac{3}{6} =$

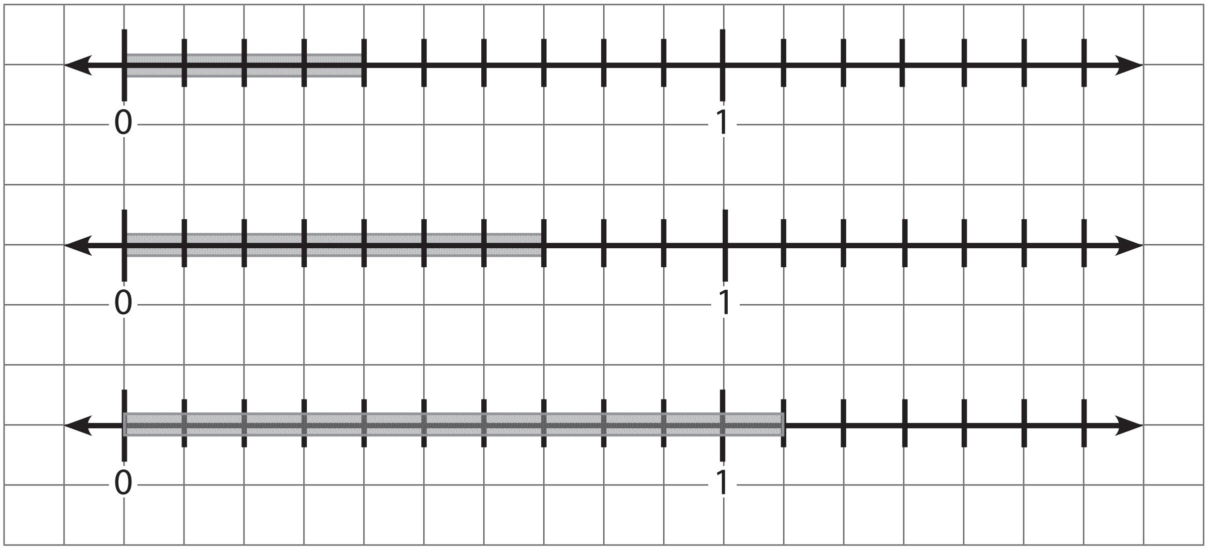
a. $3\frac{8}{6}$

b. $10\frac{1}{6}$

c. $10\frac{5}{6}$

d. $4\frac{1}{6}$

4. All of the following equations are true statements. Which equation is represented by this model? The whole is the distance from 0 to 1.



a. $\frac{4}{10} + \frac{7}{10} = \frac{11}{10}$

b. $\frac{4}{13} + \frac{7}{13} = \frac{11}{13}$

c. $\frac{11}{11} - \frac{7}{11} = \frac{4}{11}$

d. $\frac{4}{16} + \frac{7}{16} = \frac{11}{16}$

Name: ____________________

Wrapping It Up

Think about two fractions that have a sum of $\frac{1}{2}$. Write an addition equation that has a sum of $\frac{1}{2}$.

Name: ______________________________

Warming Up:

1. Find 2 fractions with like denominators whose sum is equal to 1.

2. Find another pair of fractions with like denominators whose sum is equal to 1.

3. Find 2 fractions with like denominators whose difference is equal to 1.

4. Find another pair of fractions with like denominators whose difference is equal to 1.

Name: ____

Learning to Solve:

We are going to play Close to 1. Your pair has a game sheet and a set of cards. Each set of cards has 4 of each number: 1, 2, 3, 4, and 5. You will shuffle the cards, then each of you will draw 4 number cards. The object of the game is to use the numbers to create a sum that is close to 1. You will write your numbers of the cards in the boxes (one in each box to the left of the = sign). Add the two fractions together, and the sum should be close to 1 (write the sum in the boxes after the = sign). Whoever gets a sum closer to 1 gets a point. If your sums are the same distance from 1, you both earn a point. You will play 2 rounds, shuffle the cards again and play 2 more rounds. Whoever has the most points at the end of the 4 rounds is the winner.

Name: ____________________________________

Close to 1 Game Sheet

Player A	Player B
Round 1 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 2 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 3 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 4 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Total Score ______	**Total Score** ______

Name: ____________________________

Practicing Together

Solve each problem. Draw models to help find the sum or difference.

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

2. $\frac{1}{5} + \frac{7}{10} =$

3. $\frac{3}{4} - \frac{5}{12} =$

4. Cameron subtracted $\frac{3}{4} - \frac{3}{8}$. Which of the following statements is true?

a. The difference is less than $\frac{1}{2}$ because $\frac{3}{8}$ is close to $\frac{1}{2}$ and $\frac{3}{4}$ is slightly more than $\frac{1}{2}$.

b. The difference is 0 because 3 – 3 = 0.

c. The difference is greater than $\frac{1}{2}$ because $\frac{3}{4}$ is more than $\frac{1}{2}$ and $\frac{3}{8}$ is less than $\frac{1}{2}$.

d. It is not possible to find the difference because the fraction you are subtracting has a denominator greater than the number you are subtracting from.

Name: ____________________________________

Trying It on Your Own

1. Charlene said that the sum of $\frac{1}{3} + \frac{3}{4}$ is less than 1. Is she correct? Why or why not?

a. Yes. The sum is $\frac{4}{7}$.

b. Yes. $\frac{3}{4}$ is less than 1 and $\frac{1}{3}$ is close to 0, so the sum of $\frac{1}{3}$ and $\frac{3}{4}$ is less than 1.

c. No. The sum is $\frac{13}{7}$, which is greater than 1.

d. No. $\frac{3}{4}$ is slightly less than 1, and $\frac{1}{3}$ is close to $\frac{1}{2}$, so the sum is greater than 1.

2. Find the sum of $\frac{5}{6} + \frac{5}{12}$.

a. $\frac{15}{12}$

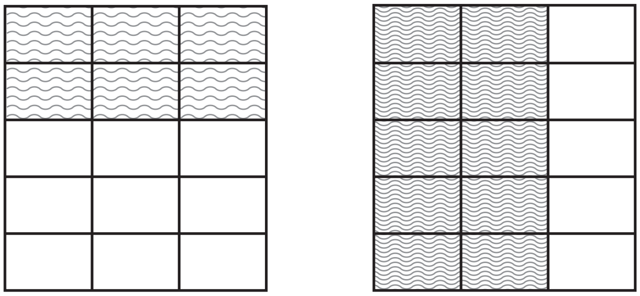
b. $\frac{10}{18}$

c. $\frac{10}{12}$

d. $1\frac{1}{2}$

Name: ____________________

3. Mark drew this model to represent $\frac{2}{5} + \frac{2}{3}$. Is his model correct?



a. No. There should only be 8 equal-sized partitions in each model.

b. No. This representation is incorrect because the parts shaded are not equal sized.

c. Yes. His representation is correct because the 15 equal-sized partitions represent the common denominator.

d. Yes. This representation is correct because the sum is equal parts.

4. Find the difference of $\frac{7}{8} - \frac{1}{4}$.

a. $\frac{6}{4}$

b. $\frac{8}{12}$

c. $\frac{5}{8}$

d. $\frac{9}{8}$

Name: ______________________________

Wrapping It Up

As time permits replay the Close to 1 game. You may also change the game to Close to 0 if you feel students need more practice with subtraction.

Name: ____________________

Warming Up:

Show an area or length model that represents each fraction.

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

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

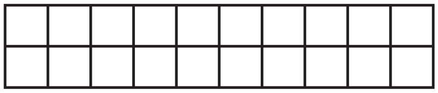
3. $\frac{1}{8}$

4. $\frac{5}{9}$

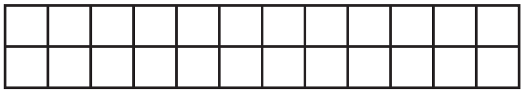
Go back and write which benchmark fraction the fraction is closest to.

Name: ______________________________

Learning to Solve:

1. 

Whole: ____________________

2. 

Whole: ____________________

3. James has 15 model cars in his collection. $\frac{2}{3}$ of them are blue. How many blue cars does James have?

Estimate ____________________

How many blue cars does James have in his model car collection? _____

What is $\frac{2}{3}$ of 15? _____

Was your estimate reasonable? ____________________

Name: ______________________________

Practicing Together:

We are going to play the Product Game. I will draw 4 number cards from my deck of cards. You will write the numbers in the blanks to make 2 fractions. Then, you will find the product. You get points depending on the product, and write the number of points in the space to the right. If your product is greater than or equal to 1, you will score 5 points. If your product is greater than $\frac{1}{2}$ but less than 1, you will score 3 points. If your product is less than or equal to $\frac{1}{2}$, you will score 1 point. We will play as many rounds as we can in the time we have remaining. At the end of time, whoever has the highest score is the winner.

Name: ____________________________________

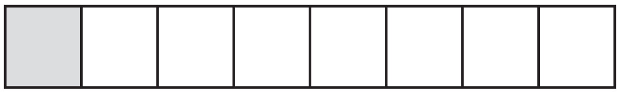
The Product Game Sheet

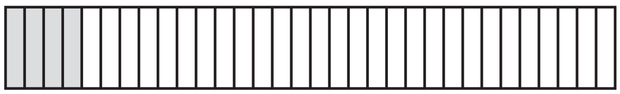
Equation	Score
Round 1 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 2 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 3 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 4 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 5 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	

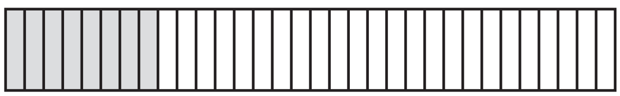
Name: ______________________________

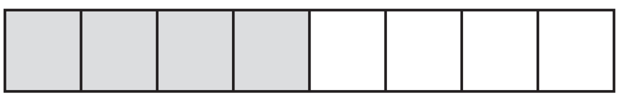
Trying It on Your Own

1. Aaron brought a 32-oz bottle of water to school. He drank $\frac{1}{8}$ of it. Which model represents this problem?

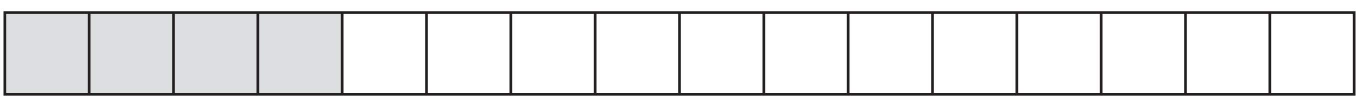
a. 

b. 

c. 

d. 

2. What expression does this model represent? The whole is the distance from 0 to 1.



a. $\frac{1}{4}$ of 16

b. $\frac{1}{8}$ of 16

c. $\frac{1}{16}$ of 4

d. $\frac{1}{8}$ of 4

Name: ____

3. Betty said that $\frac{3}{5}$ of 20 is 15. Craig disagrees and said that $\frac{3}{5}$ of 20 is 12. Who is correct and why?

a. Betty is correct because $3 \times 5 = 15$.

b. Betty is correct because $3 \times 20 = 60$ and $60 \div 5 = 15$.

c. Craig is correct because $3 + 5 = 8$ and $20 - 8 = 12$.

d. Craig is correct because there are 5 equal groups of 4 in 20 and 3 of those groups of 4 equals 12.

4. Margaret's garden plot is $\frac{1}{10}$ of the community garden plot. The community garden plot is 100 square feet. How many square feet is Margaret's garden plot?

a. 90 square feet

b. 10 square feet

c. 30 square feet

d. 110 square feet

Name: ______________________________

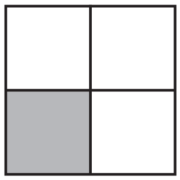
Wrapping It Up

Replay the Product Game as time allows.

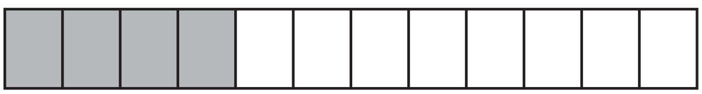
Name: ____

Warming Up:

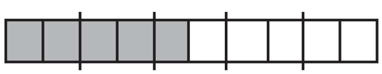
Match each model to the expression it represents:



$\frac{1}{3}$ of 12



$\frac{1}{2}$ of 10



$\frac{1}{4}$ of 4

Name: ____________________________________

Learning to Solve:

1. Marcia had $\frac{2}{3}$ of a gallon of paint. She needs $\frac{3}{4}$ of what is left in the gallon to finish painting her room. How much of a gallon of paint will Marcia use to finish painting her room?

Estimate: ____________________

Draw a model:

How much of a gallon of paint will Marcia use to finish painting her room? __________

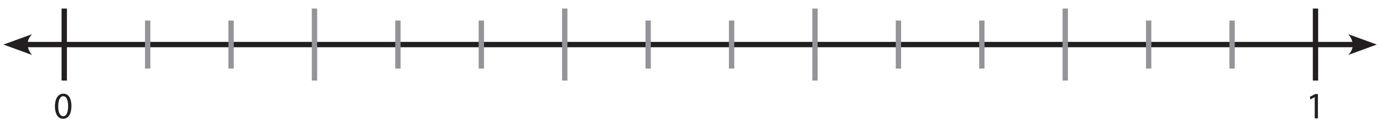
2. Use an area model to represent $\frac{3}{5}$ of $\frac{3}{4}$.

What area of the rectangle is represented by $\frac{3}{5}$ of $\frac{3}{4}$? __________

Name: ______________________________

Practicing Together:

1. Solve $\frac{2}{5} \times \frac{2}{3}$ using the number line.



Find the product of $\frac{5}{6} \times \frac{1}{2}$.

Find the product of $\frac{1}{3} \times \frac{9}{10}$.

Name: ______________________________

2. "If I multiply $\frac{2}{3} \times \frac{3}{4}$, I will get a product of $\frac{1}{2}$," said Clancy. Do you agree with Clancy? Why or why not?

a. No, I do not agree because $\frac{1}{2}$ is less than either factor and multiplication makes a bigger answer.

b. No, I do not agree because the answer should be $\frac{8}{9}$.

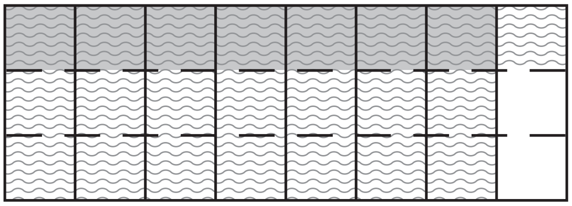
c. Yes, I agree because those fractions are close to $\frac{1}{2}$.

d. Yes, I agree because there are 3 $\frac{1}{4}$ parts. $\frac{2}{3}$ of those parts would be $\frac{2}{4}$ or $\frac{1}{2}$.

Name: ______________________________

Trying It on Your Own

1. What expression does this model represent?



a. $\frac{1}{7} \times \frac{1}{3}$

b. $\frac{1}{3} \times \frac{7}{7}$

c. $\frac{1}{3} \times \frac{1}{8}$

d. $\frac{1}{3} \times \frac{7}{8}$

2. What is the product of $\frac{2}{9}$ and $\frac{1}{4}$?

a. $\frac{2}{13}$

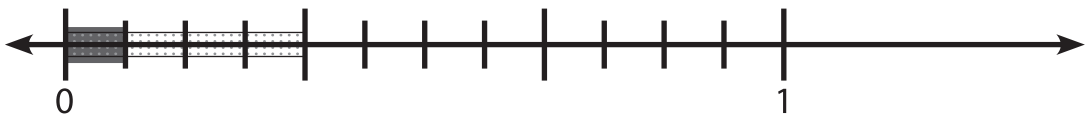
b. $\frac{17}{36}$

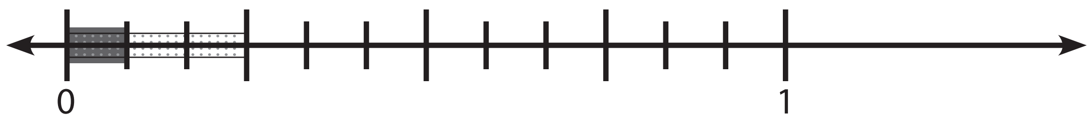
c. $\frac{2}{36}$

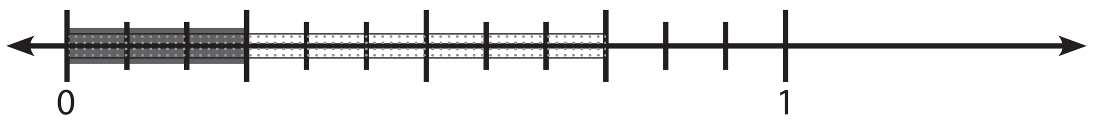
d. $\frac{3}{13}$

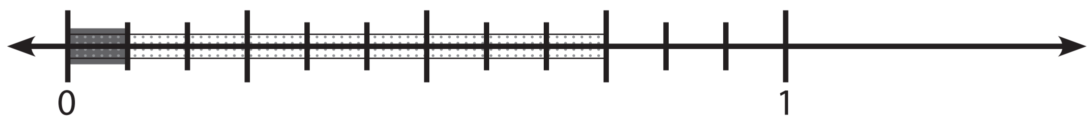
Name: ________________________________

3. Which model represents $\frac{1}{3} \times \frac{1}{4}$?

a. 

b. 

c. 

d. 

4. $\frac{5}{8}$ of $\frac{2}{5}$

a. $\frac{10}{40}$

b. $\frac{7}{40}$

c. $\frac{7}{13}$

d. $\frac{10}{13}$

Name: ______________________________

Wrapping It Up

We are going to play the Product Game. I will draw 4 number cards from my deck of cards. You will write the numbers in the blanks to make 2 fractions. Then, you will find the product. You get points depending on the product, and write the number of points in the space to the right. If your product is greater than or equal to 1, you will score 5 points. If your product is greater than $\frac{1}{2}$ but less than 1, you will score 3 points. If your product is less than or equal to $\frac{1}{2}$, you will score 1 point. We will play as many rounds as we can in the time we have remaining. At the end of time, whoever has the highest score is the winner.

Name: ______________________________

The Product Game Sheet

Equation	Score
Round 1 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 2 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 3 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 4 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 5 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	

Name: ______________________________

Warming Up:

Solve each problem.

1. A daily serving of fruit is 2 apples. How many servings can you make from a group of 14 apples?

2. A daily serving of cookies is $\frac{1}{2}$ of a cookie. How many servings of $\frac{1}{2}$ cookies are there in 6 cookies?

Name: ____________________

Learning to Solve:

1. Each person in the group will get $\frac{2}{3}$ of a medium pizza. There are 4 medium pizzas. How many people are in the group?

Estimate how many people are in the group.

What is the equation for the problem?

Draw 4 rectangular area models to represent the 4 medium pizzas. Represent $\frac{2}{3}$ of a medium pizza on each area of the rectangle in your model.

Circle each group of $\frac{2}{3}$.

How many groups of $\frac{2}{3}$ are in your model? ______

How many people are in the group? ______

Name: ________________________________

Practicing Together

Eileen has 5 feet of ribbon. She needs $\frac{3}{5}$ of a foot to make a hair bow. How many hair bows will she be able to make?

1. Draw a model to represent this problem.

2. What is the unit fraction of $\frac{3}{5}$? ______

3. How many equal size parts will each shape in your model be partitioned into? ______

4. Write the division equation that represents this problem.

Name: ____

5. How many hair bows can Eileen make?

6. Are there any $\frac{1}{5}$ pieces not in a group? ___________ How many? ___________

How many $\frac{1}{5}$ are in each group? ______ So, the leftover piece is 1 of 3, or $\frac{1}{3}$.

Write the complete equation.

7. Maria divided $6 \div \frac{1}{4}$. Which of the following is an accurate statement?

a. The quotient is less than 6 because she is dividing.

b. The quotient is greater than 6 because it represents how many fourths are in 6.

c. The quotient is less than 1 because you are dividing by a fraction.

d. The quotient is 0 because $\frac{1}{4}$ is close to 0.

Name: ____________________

Trying It on Your Own

1. What is the quotient of $4 \div \frac{1}{2}$?

a. 2

b. $\frac{1}{2}$

c. 8

d. 16

2. There are 10 monkeys in the children's zoo. Each monkey eats $\frac{2}{3}$ of a pound of carrots for a snack each day. How many pounds of carrots does the zookeeper give the monkeys each day?

a. 7

b. 4

c. 15

d. $\frac{1}{15}$

Name: ______________________________

3. Tom is filling containers of cereal. Each container holds $\frac{1}{4}$ of a pound of cereal. If Tom has 7 pounds of cereal, how many containers can he fill?

a. Tom can fill 7 containers.

b. Tom can fill 28 containers.

c. Tom can fill $\frac{1}{28}$ containers.

d. Tom can fill 1 container.

4. Jim has $\frac{1}{3}$ of a pie. He wants to share it equally among himself and 2 friends. Which expression could be used to determine how much pie Jim and his friends will get?

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

b. $3 \times \frac{1}{3}$

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

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

Name: ____

Wrapping It Up

We are going to play the Product Game. I will draw 4 number cards from my deck of cards. You will write the numbers in the blanks to make 2 fractions. Then, you will find the product. You get points depending on the product, and write the number of points in the space to the right. If your product is greater than or equal to 1, you will score 5 points. If your product is greater than $\frac{1}{2}$ but less than 1, you will score 3 points. If your product is less than or equal to $\frac{1}{2}$, you will score 1 point. We will play as many rounds as we can in the time we have remaining. At the end of time, whoever has the highest score is the winner.

Name: ______________________________

The Product Game Sheet

Equation	Score
Round 1 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 2 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 3 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 4 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 5 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	

Name: ______________________________

Warming Up:

Solve the problems.

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

2. $\frac{3}{4} - \frac{2}{5} =$

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

Name: ________________________________

Learning to Solve:

1. $\frac{3}{4} \div \frac{1}{2} = ?$ First, use an area model to represent $\frac{3}{4}$.

Circle the whole.

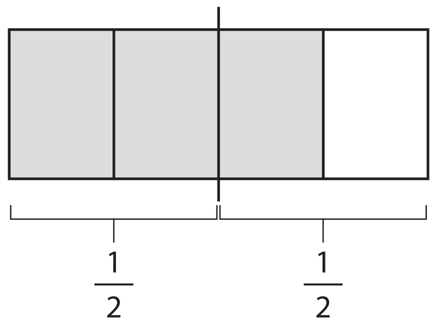
Label each $\frac{1}{2}$ of the whole.

How many $\frac{1}{2}$s are in the $\frac{3}{4}$ part of the whole? ______

Answer:

Name: ______________________________

2. Write the equation modeled.



Common denominator for $\frac{3}{4}$ and $\frac{1}{2}$: ______

Equivalent fractions for each of these fractions: ____________________

Substitute the equivalent fractions for the fractions in the problem.

Write the division equation with the equivalent fractions.

3. Using this method, find the quotient of $\frac{3}{5} \div \frac{3}{10}$.

Name: ____

Practicing Together:

Solve the following problem.

Find the quotient of $\frac{7}{10} \div \frac{1}{5}$. ______

1. How will you partition your model? ______________________

2. Draw a model to represent the problem.

3. How many groups of $\frac{1}{5}$ are in $\frac{7}{10}$? ____

4. Check your answer by using the common denominator algorithm.

Name: ___________________________

5. Marc divided $3\frac{1}{2} \div \frac{3}{4}$. when he used the common denominator method, his quotient was $4\frac{2}{3}$. When he used the reciprocal method, his quotient was $\frac{28}{6}$. Which answer is correct?

a. $4\frac{2}{3}$ because $\frac{28}{6}$ is not in simplest form.

b. $\frac{28}{6}$ because it would be $\frac{7}{2} \times \frac{4}{3} = \frac{28}{6}$

c. Both answers are correct because they are equivalent fractions.

d. Neither answer is correct because both fractions are larger than $3\frac{1}{2}$.

Name: ____________________________________

Trying It on Your Own

1. What is the quotient of $\frac{6}{7} \div \frac{3}{14}$?

a. $\frac{1}{4}$

b. $\frac{9}{49}$

c. 4

d. $5\frac{4}{9}$

2. What is the quotient of $\frac{3}{8} \div \frac{5}{12}$?

a. $1\frac{1}{9}$

b. $\frac{9}{10}$

c. $\frac{5}{32}$

d. $\frac{4}{5}$

Name: ______________________________

3. Sarah has some brown sugar for baking. She needs to share it with her friends. She needs to give $\frac{1}{2}$ of a pound to each friend. If Sarah has 6 pounds of brown sugar, how many friends can she share the brown sugar with?

a. She can share with 6 friends.

b. She can share with 12 friends.

c. She can share with 3 friends.

d. She can share with 9 friends.

4. Jesse said that the quotient of $\frac{5}{6} \div \frac{2}{3}$ is $\frac{10}{18}$. Is Jesse right?

a. No, the quotient is $\frac{5}{4}$.

b. No, the quotient is $\frac{1}{2}$.

c. Yes, the quotient is $\frac{10}{18}$.

d. No, the quotient is $\frac{7}{9}$.

Name: ____________________

Wrapping It Up

We are going to play 4 to Go in the time we have remaining. One of you will be Player A and the other Player B; decide now. (pause) You will take turns rolling your 4 dice. (Or, the teacher will roll the 4 dice.) You will both place your numbers in the boxes on the game sheet, Player A or Player B, to make 2 fractions. Perform the division. You get points depending on the quotient; write the number of points in the space to the right. If your quotient is less than or equal to $\frac{1}{2}$, you score 1 point. If your quotient is greater than $\frac{1}{2}$ but less than 1, you score 3 points. If the quotient is greater than or equal to 1, you score 5 points. The person with higher score wins.

Name: ______________________________

4 to Go Game Sheet

PLAYER A	Score	PLAYER B	Score
Round 1 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 1** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 2 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 2** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 3 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 3** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 4 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 4** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 5 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 5** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	

Name: ______________________________

Warming Up:

Solve each problem.

1. $\frac{5}{6} + \frac{3}{4} =$

2. $\frac{5}{6} - \frac{3}{4} =$

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

4. $\frac{5}{6} \div \frac{3}{4} =$

Name: ______________________________

Learning to Solve:

1. Francis, Gabe, Pam, and Elizabeth each are responsible for shoveling the snow off a specific area of the playground. Francis shovels $\frac{1}{3}$ of the playground. Gabe shovels $\frac{2}{5}$ of the playground. Pam shovels $\frac{1}{5}$ of the playground. Elizabeth will shovel the remaining area. What area of the playground will Elizabeth shovel?

A. What is the whole? ____________________

B. Estimate the area Francis and Gabe shoveled: ______________________________

C. What is the actual area of the playground that Francis and Gabe shoveled? _____

D. If Francis, Gabe, and Pam shovel the snow from the area of the playground that they are responsible for, what area remains for Elizabeth to shovel?

____

Name: ____________________

2. What values make each equation true? Do not use digits already in the problem.

A. $\frac{\square}{6} + \frac{\square}{8} = 1$

B. $\frac{\square}{5} - \frac{\square}{3} = 1$

C. $\frac{\square}{6} + \frac{5}{\square} = 1$

3. On a 12-mile bike ride, you will stop to rest after you have ridden $\frac{2}{3}$ of the distance. How many miles will you have biked when you stop to rest?

Name: ______________________________

Trying It on Your Own

1. Allan and Henry calculated a different product for the expression $\frac{4}{5}$ x $\frac{2}{5}$. Allan said the product was $\frac{8}{5}$ and Henry said that the product was $\frac{8}{25}$. Which answer and explanation are correct?

a. Allan is correct because when you multiply 2 fractions, you multiply the numerators and keep the denominator the same.

b. Allan is correct because both fractions have the same denominator, so you multiply the first fraction, $\frac{4}{5}$, by the numerator of the second fraction, which is 2.

c. Henry is correct because when you multiply 2 fractions, you multiply the numerators and square the denominator.

d. Henry is correct because to find the product of 2 fractions, you multiply the numerators and multiply the denominators.

2. How many groups of $\frac{1}{4}$ are in 20?

a. 5

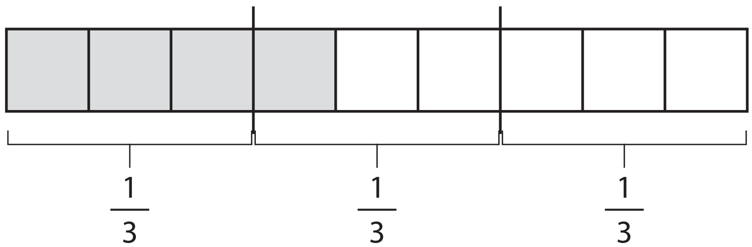
b. 80

c. 20

d. 4

Name: ____________________

3. Which division equation represents this model?



a. $\frac{4}{9} \div \frac{1}{3} = 1\frac{1}{3}$

b. $\frac{1}{3} \div \frac{1}{9} = 4$

c. $\frac{4}{9} \div 3 = 1\frac{1}{3}$

d. $3 \div \frac{1}{3} = 9$

4. Misti started her run at home and ran for $\frac{7}{9}$ of a mile. She turned around and ran $\frac{2}{5}$ mile back toward her home. Which expression would Misti use to determine how far she is from home?

a. $\frac{7}{9} - \frac{2}{5}$

b. $\frac{7}{9} + \frac{2}{5}$

c. $\frac{7}{9} \times \frac{2}{5}$

d. $\frac{7}{9} \div \frac{2}{5}$

Appendices

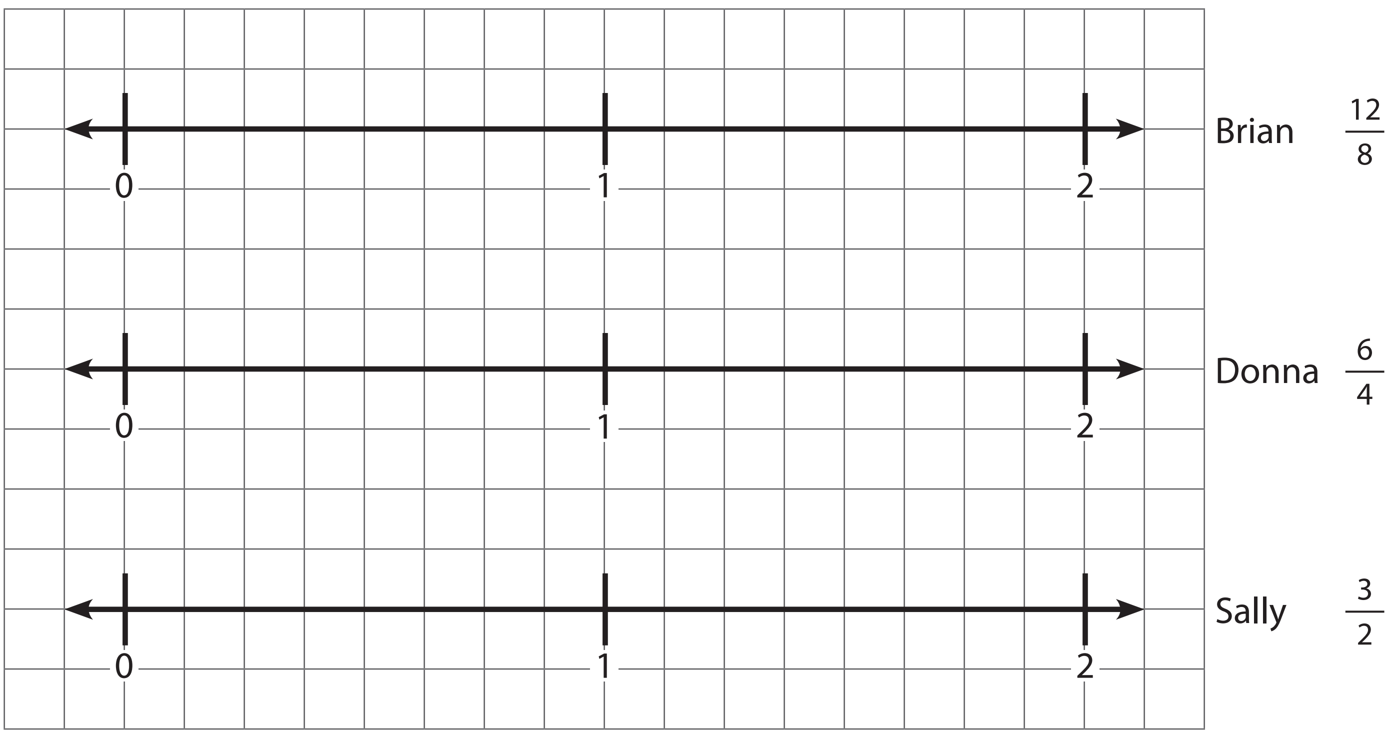
Fractions

Name: ______________________________

Warming Up:

Brian, Donna, and Sally finished an after-school run. They ran the following distances in the same amount of time: Brian ran $\frac{12}{8}$ of a mile, Donna ran $\frac{6}{4}$ of a mile, and Sally ran $\frac{3}{2}$ of a mile.

What is the whole in this problem? ____________________



Name: ____

Learning to Solve:

James has 3 of his friends over to do homework. After working for a while, they decide that they will have some cookies for a snack. When they open the cookie jar, they find 6 cookies. If all of the cookies are exactly the same size and they share the cookies evenly, how much cookie will each child get?

1. Draw a model to represent the amount of cookie each person will receive.

2. How much cookie will each person receive?

Name: ______________________________

Practicing Together:

1. Your family ordered pizza for dinner tonight. After everyone has had some pizza, there is $\frac{3}{4}$ of 1 pizza left. But 6 people want another piece of pizza. What is the size of the piece of pizza each person will get if they all receive an equal share?

Draw a diagram to represent the leftover pizza and the amount of pizza each person will receive.

What fraction of the pizza will each person receive?

2. Are these fractions equivalent?

$\frac{13}{8}$ and $\frac{7}{3}$

Yes

No

3. Draw a diagram to support your answer for number 2. Assume that both fractions refer to the same whole.

Name: ____________________________________

4. Masha said, "$\frac{4}{5}$ and $\frac{6}{7}$ are equivalent." Do you agree with Masha? Why or why not?

a. Yes, I agree with Masha because she added 2 to the numerator and the denominator.

b. Yes, I agree with Masha because they are both 1 part away from 1 whole.

c. No, I disagree with Masha because $\frac{6}{7}$ is greater than $\frac{4}{5}$.

d. No, I disagree with Masha because they both have odd numbers as the denominator.

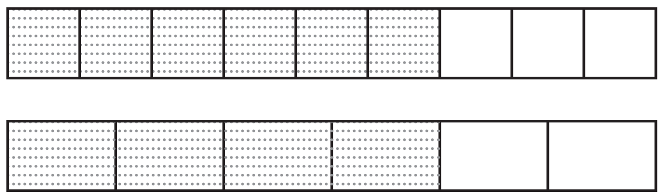
Name: ______________________________

Trying It on Your Own

1. Martin said that the fractions $\frac{6}{9}$ and $\frac{4}{6}$ are equivalent. Is he correct? Select the answer that has a correct explanation or model.

a. Yes, because both fractions include the number 6.

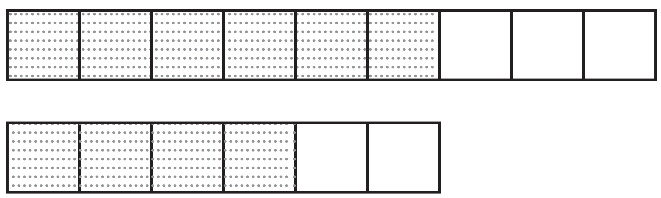
b. Yes, as shown by these models:



$\frac{6}{9}$

$\frac{4}{6}$

c. No, as shown by these models:



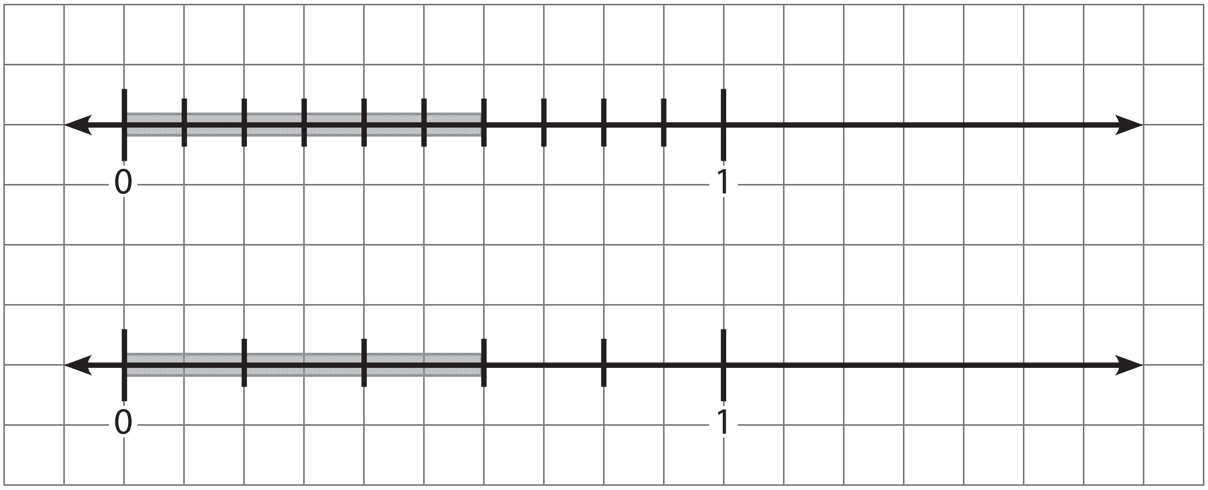
$\frac{6}{9}$

$\frac{4}{6}$

d. No, $\frac{6}{9} > \frac{4}{6}$ because 6 is greater than 4 and 9 is greater than 6.

Name: ____________________

2. Which answer shows the correct comparison symbol shown by this model? The whole is the distance from 0 to 1.



a. $\frac{6}{10} = \frac{3}{5}$

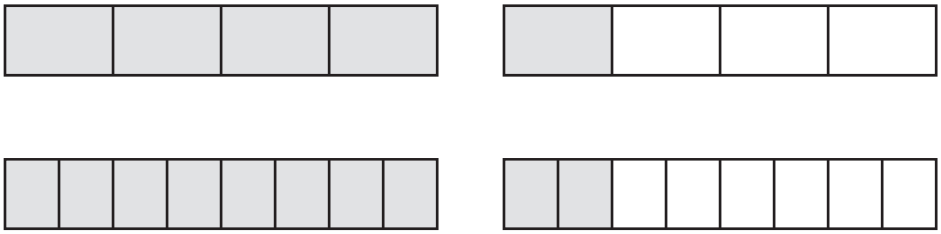
b. $\frac{3}{6} = \frac{6}{11}$

c. $\frac{6}{10} > \frac{3}{5}$

d. $\frac{3}{5} > \frac{6}{10}$

Name: ____

3. The teacher displayed these 2 rectangular models on the board:



The whole is 1 rectangle.

Which answer is correct?

a. Sally said the models show $\frac{5}{8} = \frac{10}{16}$.

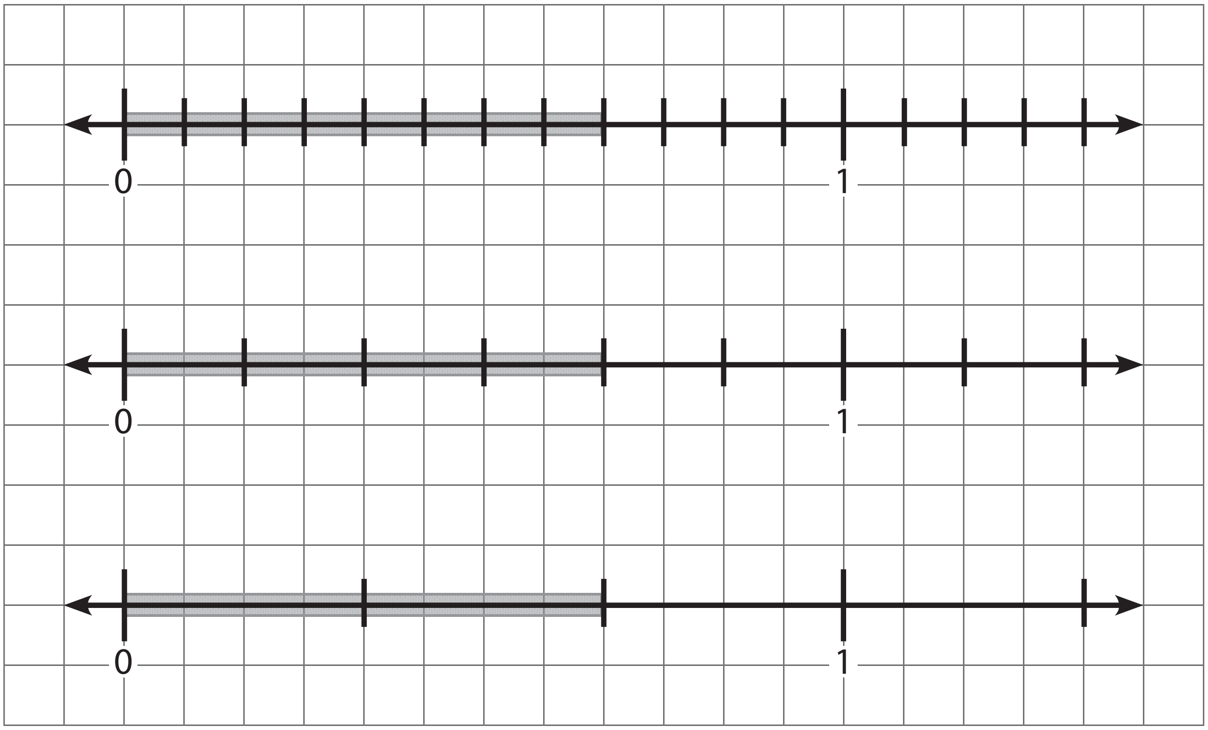
b. Marcus said that the models show $\frac{5}{4} = \frac{10}{16}$.

c. Doug said that the models show $\frac{5}{8} > \frac{10}{8}$.

d. Annie said that the models show $\frac{5}{4} = \frac{10}{8}$.

Name: ______________________________

4. Choose the correct equivalence statement that represents this model:



a. $\frac{8}{16} = \frac{4}{8} = \frac{2}{4}$

b. $\frac{9}{12} = \frac{4}{7} = \frac{2}{4}$

c. $\frac{1}{2} = \frac{2}{5} = \frac{3}{10}$

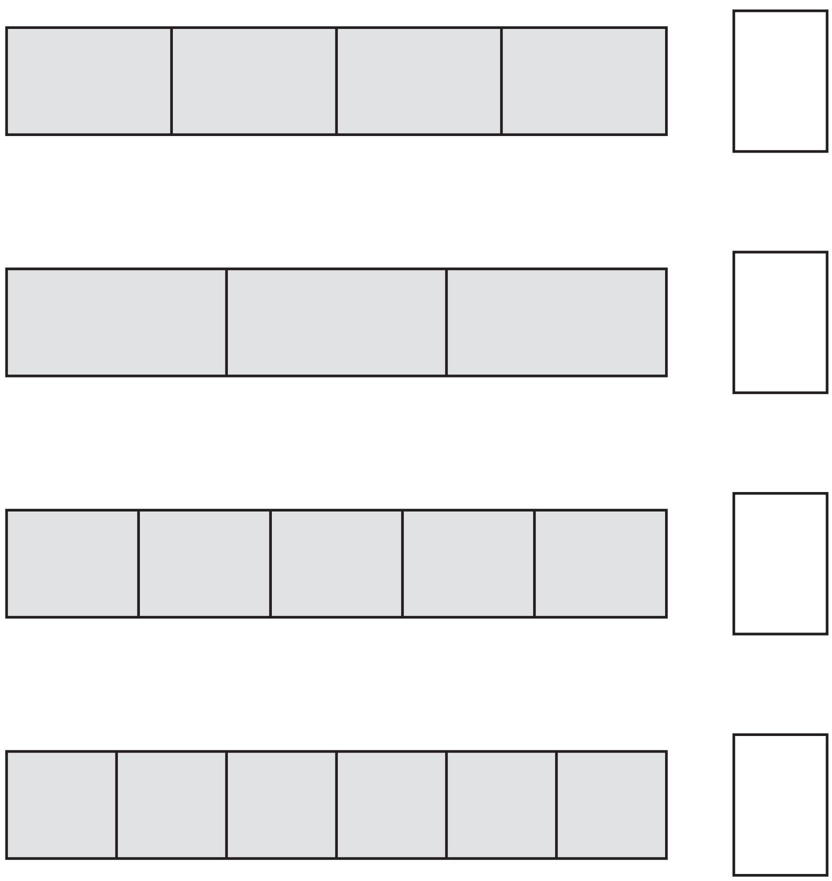
d. $\frac{2}{3} = \frac{4}{6} = \frac{8}{12}$

Name: ____________________

Wrapping It Up

1. Write the fraction represented by each model in the box on the right of the model.

2. Are these fractions equivalent? How do you know?



Name: ____

Warming Up:

Directions:

1. You are going to play the Factor Game. This is a two-person game, Player A and Player B. Decide now who will be Player A and who will be Player B. The object of the game is to get as many points as you can to win the game. To show how the game is played, to start, the teacher is Player A and the class is Player B for this first game.

2. Look at the numbers 1 to 30 on the Factor Game Board. Each number will be used only one time during the game, but some numbers may not be used at all.

3. Player A first selects one number from 1 to 30 from the Factor Game Board and circles it using a colored marker. In this case, Player A selects the number 6, which is circled on the game board and also is written in the Player A Score column of the Factor Game Record Sheet.

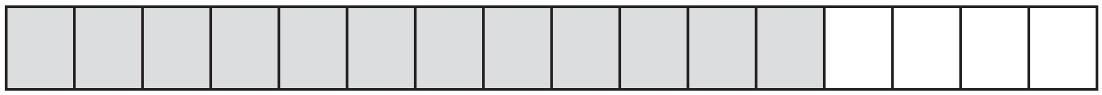
4. Now it's Player B's turn, who identifies factors of 6 and circles the factors using his or her marker and also writes them in the Factor column of the record sheet. Because any number times 1 equals that number, 1 is circled and written. Are there any other factors of 6? Yes, 3 and 2 are also factors of 6; so Player B circles 3 and 2 on the game board and writes the numbers next to the 1 in the Factor column of the record sheet. Because 1 + 3 + 2 = 6, a 6 is written in the Player B Score column.

5. Play continues until no two numbers remain on the game board that can be multiplied together to form a product that matches the number chosen.

6. Once there are no more factors available, each person determines the point total by adding the numbers in his or her column of the record sheet. The winner is the person with the most points. If more than one game is played, players alternate who goes first, while maintaining their role as Player A or B.

Name: ______________________________

Learning to Solve:



What fraction does the model represent?

Write the relationship between the fractions represented in our first 2 models.

Write a mathematical expression showing how $\frac{6}{8}$ is related to $\frac{3}{4}$.

Name: ______________________________

1. Write all the multiplication facts that you can think of that result in a product of 12.

2. Write all the multiplication facts that you can think of that result in a product of 16.

3. Write the factors that are used in the multiplication facts for 12 and 16.

4. Circle the factors they have in common.

5. Greatest common factor: ______

Name: ______________________________

Practicing Together:

Simplify each fraction.

A. $\frac{5}{15} =$

What number was used to divide the numerator and the denominator? ___________

B. $\frac{20}{30} =$

What number was used to divide the numerator and the denominator? ___________

C. $\frac{24}{28} =$

What number was used to divide the numerator and the denominator? ___________

For each of the following fractions, find the simplest form of the fraction and 1 other equivalent fraction.

Given Fraction	Simplest Form	Another Equivalent Fraction
1. $\frac{3}{12}$		
2. $\frac{2}{6}$		
3. $\frac{10}{16}$		
4. $\frac{6}{9}$		

Name: ____________________________________

Trying It on Your Own

1. Which fraction is in simplest form?

a. $\frac{12}{15}$

b. $\frac{9}{10}$

c. $\frac{8}{18}$

d. $\frac{4}{6}$

2. Peter said that $\frac{3}{12}$ was the simplest form of $\frac{6}{24}$. Is he correct?

a. Yes, because 3 and 12 do not have any common factors.

b. Yes, because he already divided $\frac{6}{24}$ by $\frac{2}{2}$ to arrive at $\frac{3}{12}$.

c. No, because $\frac{3}{12}$ can be divided again by $\frac{1}{1}$.

d. No, because $\frac{3}{12}$ can be divided again by $\frac{3}{3}$.

Name: ______________________________

3. Which answer is the simplest form of $\frac{16}{40}$?

a. $\frac{8}{20}$

b. $\frac{2}{5}$

c. $\frac{8}{32}$

d. $\frac{4}{10}$

4. To find the simplest form of the fraction $\frac{20}{30}$, what is the greatest common factor?

a. 2

b. 5

c. 10

d. 20

Name: ______________________________

Wrapping It Up

Jason simplified $\frac{14}{4}$ to $3\frac{1}{2}$. Explain the process that Jason might have used.

Name: ____________________________________

Warming Up:

We are going to play Close to 1. Your pair has a game sheet and a set of cards. Each set of cards has 4 of each number: 1, 2, 3, 4, and 5. You will shuffle the cards, then each of you will draw 4 number cards. The object of the game is to use the numbers to create a sum that is close to 1. You will write your numbers of the cards in the boxes (one in each box to the left of the = sign). Add the two fractions together, and the sum should be close to 1 (write the sum in the boxes after the = sign). Whoever gets a sum closer to 1 gets a point. If your sums are the same distance from 1, you both earn a point. You will play 2 rounds, shuffle the cards again and play 2 more rounds. Whoever has the most points at the end of the 4 rounds is the winner.

Name: ______________________________

Close to 1 Game Sheet

Player A	Player B
Round 1 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 2 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 3 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 4 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Total Score ______	**Total Score** ______

Name: ________________________________

Learning to Solve:

Jake had $4\frac{1}{4}$ pizzas for his party. Before everyone came, he ate $\frac{7}{8}$ of 1 pizza. How much pizza was left for his guests?

Draw a model of $4\frac{1}{4}$.

Write the expression. ____________________

On your model, partition each whole into eighths.

How many eighths represent the $4\frac{1}{4}$ pizzas in your model? __________

Name: ____

Show how you will subtract $\frac{7}{8}$ from your model of $4\frac{1}{4}$.

How many one-eighths of the pizza remain for the guests? ______

How do we write it as a fraction? ______

What is another way to write the difference? ___________

Rewrite the solution, using the original equation. ______________________

Name: ____________________________________

Practicing Together:

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

A. Using benchmark fractions, estimate the sum.

B. Find the least common denominator by finding the least common multiple.

C. Find the equivalent fraction(s).

D. Find the sum.

2. $3\frac{5}{6} - \frac{2}{3} =$

A. Using benchmark fractions, estimate the difference.

B. Determine what the common denominator is.

C. Find the equivalent fraction(s).

D. Find the difference.

Name: ______________________________

3. Tomas subtracted $2\frac{1}{4} - 1\frac{2}{3}$. Which statement is accurate?

a. The difference is close to 2 because $2\frac{1}{4}$ is larger than $1\frac{2}{3}$.

b. The difference is close to $\frac{1}{2}$ because $1\frac{2}{3}$ is close to $1\frac{1}{2}$ and $2\frac{1}{4}$ is close to 2.

c. The difference is close to 0 because both numbers are close to 2.

d. The difference is close to 1 becaus $2\frac{1}{4}$ is close to 2 and $1\frac{2}{3}$ is close to 1.

Name: ______________________________

Trying It on Your Own

1. Margaret cut 2 pieces of wood that were $4\frac{1}{4}$ inches long and $6\frac{1}{2}$ inches long. She said that she had cut $10\frac{2}{6}$ inches of wood. Is Margaret correct?

a. No, Margaret had cut $10\frac{3}{4}$ inches of wood.

b. No, Margaret had cut $10\frac{1}{8}$ inches of wood.

c. Yes, Margaret is correct because $4 + 6 = 10$ and $\frac{1}{4} + \frac{1}{2} = \frac{2}{6}$.

d. No, Margaret had cut $\frac{35}{4}$ inches of wood.

2. Which estimate is closest to the difference of $\frac{14}{5} - \frac{3}{10}$?

a. 0

b. $\frac{1}{2}$

c. 1

d. 2

Name: ____________________________________

3. To solve the problem $2\frac{1}{7} + 7\frac{2}{3}$, Ellen converted the mixed numbers to improper fractions. Which equivalence shows the correct conversion?

a. $2\frac{1}{7} + 7\frac{2}{3} = \frac{10}{7} + \frac{12}{3}$

b. $2\frac{1}{7} + 7\frac{2}{3} = \frac{9}{7} + \frac{17}{3}$

c. $2\frac{1}{7} + 7\frac{2}{3} = \frac{15}{7} + \frac{23}{3}$

d. $2\frac{1}{7} + 7\frac{2}{3} = \frac{14}{7} + \frac{42}{3}$

4. Which equation could be used to solve this problem? Sara picked $3\frac{1}{3}$ pounds of red apples and $\frac{8}{3}$ pounds of green apples. How many pounds of apples did she pick?

a. $3\frac{1}{3} - \frac{8}{3}$

b. $\frac{50}{15} + \frac{24}{15}$

c. $\frac{10}{3} + \frac{8}{3}$

d. $\frac{30}{15} + \frac{24}{15}$

Name: ____________________

Warming Up:

Convert a mixed number to the equivalent improper fraction or convert an improper fraction to the equivalent mixed number.

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

2. $\frac{9}{5} =$

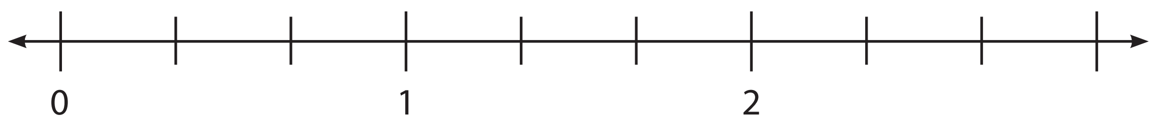
3. $5\frac{2}{3} =$

4. $\frac{18}{6} =$

Name: ____________________________________

Learning to Solve:

1. Represent $\frac{8}{3}$ on the number line.



Estimate $\frac{8}{3} \div \frac{2}{3}$, using benchmark fractions.

Circle each $\frac{2}{3}$ unit.

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

Is the answer close to your estimate?

Name: ____________________

2. $4\frac{2}{3} \div \frac{7}{6} =$

Write the division equation, using equivalent fractions.

What is $4\frac{2}{3} \div \frac{7}{6}$?

Name: ______________________________

Practicing Together:

Solve each problem.

1. Find the quotient of $\frac{12}{7} \div \frac{5}{14}$.

2. Write a division problem with the following criteria:

A. Contains an improper fraction

B. Contains a mixed number or whole number

C. Quotient is 6

Name: ______________________________

Trying It on Your Own

1. Which equation will result in a quotient of $\frac{16}{15}$?

a. $\frac{8}{5} \div \frac{2}{3}$

b. $\frac{8}{5} \div \frac{3}{2}$

c. $\frac{2}{3} \div \frac{8}{5}$

d. $\frac{3}{2} \div \frac{8}{5}$

2. Matt said that $\frac{18}{8} \div \frac{14}{8}$ is an equivalent equation for $2\frac{5}{8} \div \frac{7}{4}$. What mistake did he make?

a. Matt converted $\frac{7}{4}$ to $\frac{14}{8}$ and he should have converted it to $\frac{9}{8}$ because $8 \div 4 = 2$ and $2 + 7 = 9$.

b. Matt used 8 as the common denominator and he should have used 4.

c. Matt converted $2\frac{5}{8}$ to $\frac{18}{8}$ and he should have converted it to $\frac{21}{8}$ because there are 16 one-eighths in 2 and when you add that to 5 one-eighths, that equals $\frac{21}{8}$.

d. Matt did not make any mistake.

Name: ______________________________

3. What is the quotient for $\frac{10}{9} \div \frac{4}{3}$?

a. $\frac{40}{27}$

b. $\frac{5}{6}$

c. $\frac{10}{4}$

d. $\frac{2.5}{3}$

4. Which equation is equivalent to $3\frac{1}{3} \div \frac{2}{5}$?

a. $3\frac{5}{15} \div \frac{6}{15}$

b. $\frac{7}{3} \div \frac{2}{5}$

c. $\frac{10}{15} \div \frac{6}{15}$

d. $\frac{20}{5} \div \frac{2}{5}$

Name: ______________________________

Wrapping It Up

We are going to play 4 to Go in the time we have remaining. One of you will be Player A and the other Player B; decide now. (pause) You will take turns rolling your 4 dice. (Or, the teacher will roll the 4 dice.) You will both place your numbers in the boxes on the game sheet, Player A or Player B, to make 2 fractions. Perform the division. You get points depending on the quotient; write the number of points in the space to the right. If your quotient is less than or equal to $\frac{1}{2}$, you score 1 point. If your quotient is greater than $\frac{1}{2}$ but less than 1, you score 3 points. If the quotient is greater than or equal to 1, you score 5 points. The person with higher score wins.

Name: ________________________________

4 to Go Game Sheet

PLAYER A	Score	PLAYER B	Score
Round 1 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 1** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 2 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 2** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 3 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 3** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 4 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 4** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 5 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 5** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	

Masters for Game and Activity Cards

Fractions

Fraction Cards for Lesson 3

$\frac{3}{5}$	$\frac{1}{10}$	$\frac{10}{9}$	$\frac{4}{9}$
$\frac{2}{5}$	$\frac{7}{15}$	$\frac{2}{3}$	$\frac{14}{11}$
$\frac{7}{8}$	$\frac{3}{35}$	$\frac{13}{16}$	$\frac{5}{11}$
$\frac{13}{14}$	$\frac{1}{5}$	$\frac{3}{2}$	$\frac{5}{9}$

Fraction Mat for Lesson 3

Closest to 0	Closest to $\frac{1}{2}$	Closest to 1

Symbol and Fraction Cards for Lesson 5

$$<$$

$$>$$

$$=$$

$$\frac{2}{3}$$

Symbol and Fraction Cards for Lesson 5

$\frac{2}{5}$	$\frac{2}{7}$
$\frac{2}{9}$	$\frac{1}{7}$

Symbol and Fraction Cards for Lesson 5

$\frac{1}{3}$	$\frac{1}{5}$
$\frac{1}{9}$	$\frac{3}{7}$

Symbol and Fraction Cards for Lesson 5

$$\frac{3}{5}$$

$$\frac{3}{11}$$

$$\frac{3}{8}$$

$$\frac{3}{4}$$

Symbol and Fraction Cards for Lesson 5

$\frac{3}{6}$	$\frac{4}{3}$
$\frac{4}{5}$	$\frac{4}{9}$

Symbol and Fraction Cards for Lesson 5

$\frac{4}{11}$	$\frac{5}{3}$
$\frac{5}{8}$	$\frac{5}{9}$

Symbol and Fraction Cards for Lesson 5

$\frac{5}{12}$	$\frac{6}{7}$
$\frac{6}{4}$	$\frac{1}{2}$

Symbol and Fraction Cards for Lesson 5

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

Symbol and Fraction Cards for Lesson 5

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

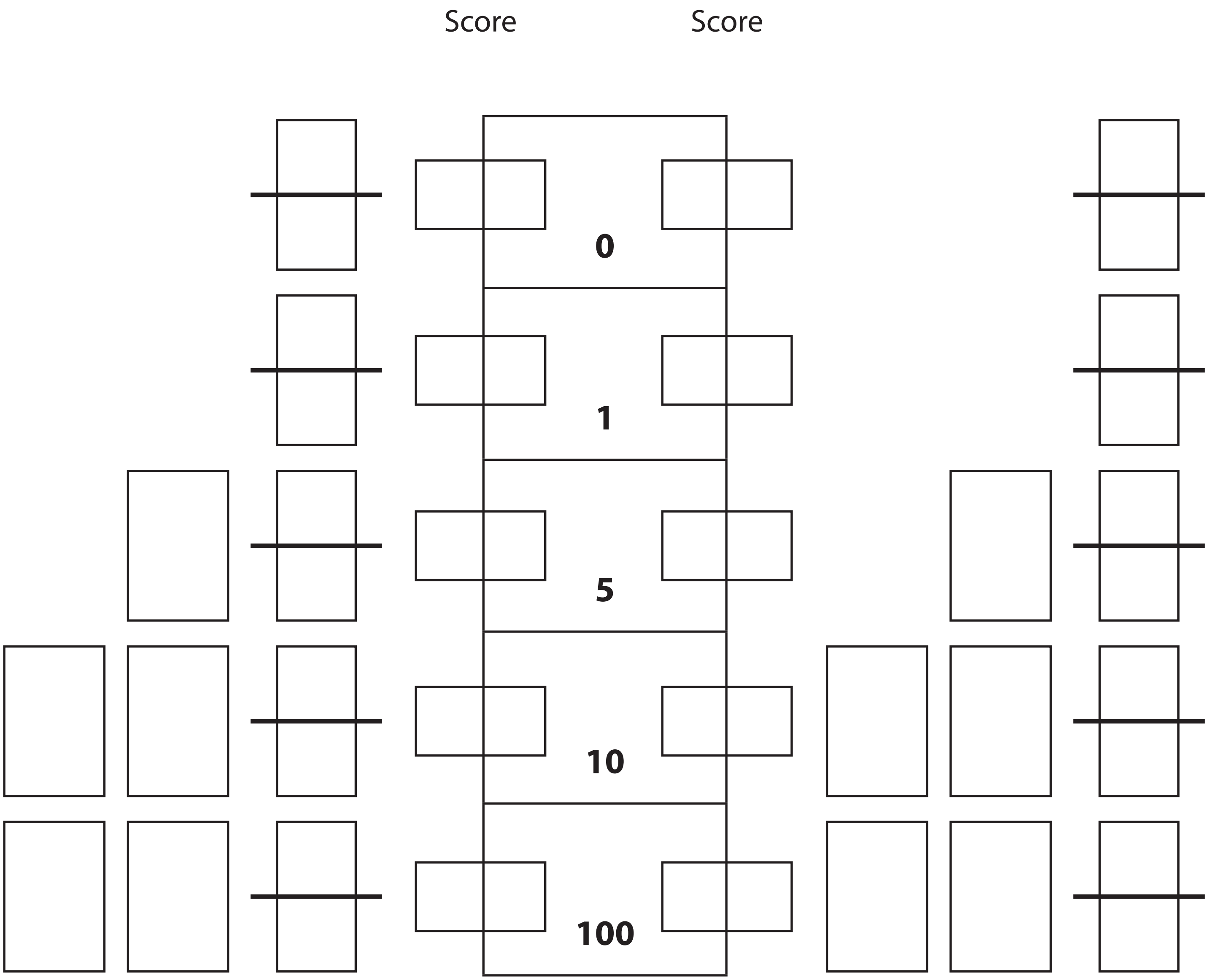
Find a Place Game Sheet for Lesson 6

(2 Players)

Use 40 cards numbered 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 *(four or each)*

Player A

Player B



Player A's Total Score

Player B's Total Score

Dougherty, B. J. (2004). *Find-a-place: Fractions*. Developed at the Curriculum Research & Development Group, University of Hawaii.

Concentration Cards for Lesson 7

$\frac{1}{2}$	$\frac{4}{8}$	$\frac{2}{5}$	$\frac{4}{10}$
$\frac{3}{8}$	$\frac{6}{16}$	$\frac{5}{8}$	$\frac{10}{16}$
$\frac{3}{4}$	$\frac{9}{12}$	$\frac{5}{6}$	$\frac{10}{12}$
$\frac{7}{8}$	$\frac{21}{24}$	$\frac{3}{2}$	$\frac{9}{6}$

Individual Factor Game Boards for Lessons 8A and 9

The Factor Game Board

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

The Factor Game Board

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

The Factor Game Board

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

The Factor Game Board

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

Factor Game Record Sheet for Lessons 8A and 9

First Move	Factors	Player A Score	Player B Score
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

Demonstration Factor Game Board for Lessons 8A and 9

The Factor Game Board

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

Example of a Completed Factor Game Record Sheet Based on First Moves for Lessons 8A and 9

First Move	Factors	Player A Score	Player B Score
1	none	lose a turn	0
2	1	2	1
3	1	3	1
4	1, 2	4	3
5	1	5	1
6	1, 2, 3	6	6
7	1	7	1
8	1, 2, 4	8	7
9	1, 3	9	4
10	1, 2, 5	10	8
11	1	11	1
12	1, 2, 3, 4, 6	12	16
13	1	13	1
14	1, 2, 7	14	10
15	1, 3, 5	15	9
16	1, 2, 4, 8	16	15
17	1	17	1
18	1, 2, 3, 6, 9	18	21
19	1	19	1
20	1, 2, 4, 5, 10	20	22
21	1, 3, 7	21	11
22	1, 2, 11	22	14
23	1	23	1
24	1, 2, 3, 4, 6, 8, 12	24	36
25	1, 5	25	6
26	1, 2, 13	26	16
27	1, 3, 9	27	13
28	1, 2, 4, 7, 14	28	28
29	1	29	1
30	1, 2, 3, 5, 6, 10, 15	30	42

Close to 1 Game Sheet for Lessons 10 and 10A

Player A	Player B
Round 1 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 2 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 3 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 4 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Round 5 $\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______	$\frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square}$ Score ______
Total Score _____	**Total Score** _____

Close to 1 Game Cards for Lessons 10 and 10A

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

The Product Game Sheet for Lessons 11, 12, and 13

Equation	Score
Round 1 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 2 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 3 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 4 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	
Round 5 $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$	

4 to Go Game Sheet for Lessons 14 and 14A

PLAYER A	Score	PLAYER B	Score
Round 1 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 1** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 2 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 2** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 3 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 3** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 4 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 4** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	
Round 5 $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$		**Round 5** $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$	

Notes

Fractions

Name: ______________________________

Name: ______________________________

Name: ______________________

Name: ______________________________

Name: ____________________

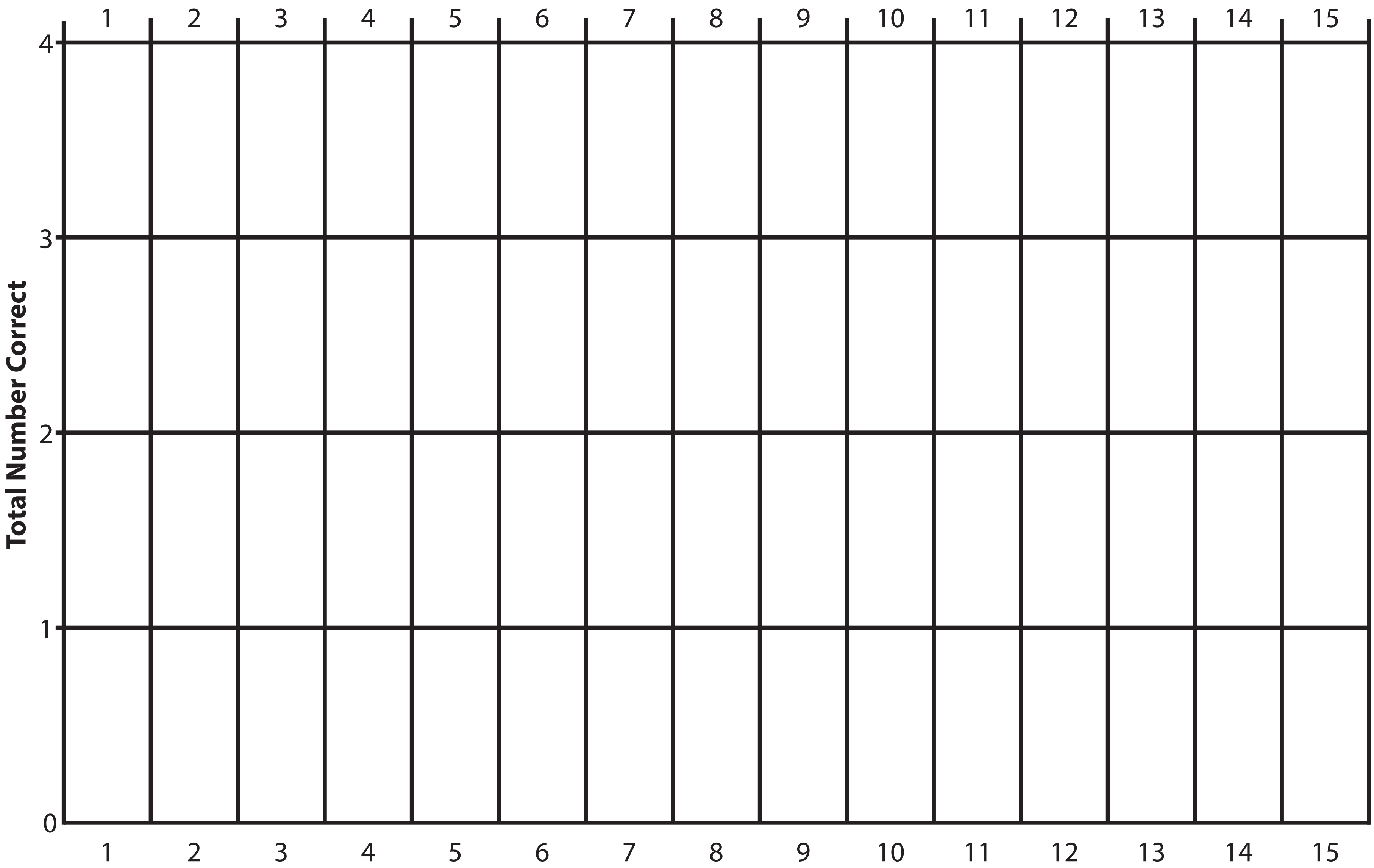
Name:

Name: ______________________________

Example											
Picture											
Generalizations											

Name ______________________

Graph Your Progress



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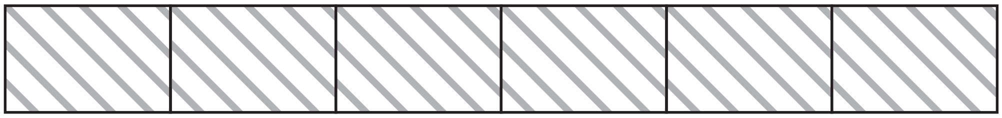
Lesson Number

Fractions

Extra Practice

Additional Practice

1. 

A. Circle the sub-unit.

B. What unit fraction does the sub-unit represent? ______

C. How many times was the sub-unit iterated to create the whole? ______________

2. Carmen said that $\frac{3}{5}$ is the unit fraction $\frac{1}{5}$ iterated 3 times. Do you agree with Carmen?

a. No, I do not agree with Carmen because the unit fraction is $\frac{1}{3}$.

b. No, I do not agree with Carmen because the unit fraction is iterated 5 times.

c. Yes, I agree with Carmen because the numerator 3 tells us that there are 3 iterations of the unit fraction $\frac{1}{5}$.

d. It is not possible to tell if Carmen is correct because you do not know the size of the unit fraction.

3. Which fraction represents the unit fraction $\frac{1}{3}$ iterated 2 times?

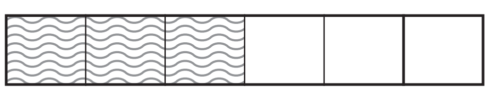
a. $\frac{2}{6}$

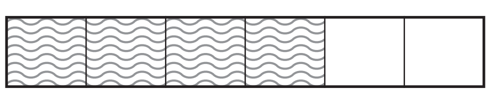
b. $\frac{2}{3}$

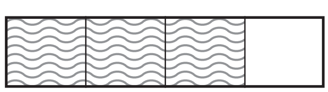
c. $\frac{1}{6}$

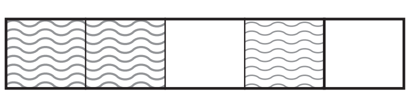
d. $\frac{3}{5}$

4. Jon iterated a unit fraction 6 times. He then shaded 4 of the sub-units. Which of the following is a representation of Jon's work?

a. 

b. 

c. 

d. 

Additional Practice

1. Sam wrote $\frac{11}{4}$.

A. Use the rectangles to represent Sam's fraction.

B. Write $\frac{11}{4}$ as a mixed number. ______

2. Isla changed $5\frac{3}{4}$ into a mixed number. Which statement describes her process?

a. Multiply 3×4, add 5. The mixed number is $\frac{17}{4}$.

b. Multiply 3×5, add 4. The mixed number is $\frac{19}{4}$.

c. Multiply 4×5, add 3. The mixed number is $\frac{23}{4}$.

d. Multiply 5×3, add 3. The mixed number is $\frac{18}{4}$.

3. Which is a correct statement about $3\frac{2}{3}$?

a. $3\frac{2}{3}$ is located between 2 and 3 on a number line.

b. $3\frac{2}{3}$ is located between 3 and 4 on a number line.

c. $3\frac{2}{3}$ is equivalent to $\frac{9}{3}$.

d. $3\frac{2}{3}$ is equivalent to $\frac{11}{9}$.

Additional Practice

1. Which comparison of two fractions is correct?

a. $\frac{3}{4} < \frac{1}{10}$

b. $\frac{3}{5} < \frac{3}{4}$

c. $\frac{6}{5} < \frac{4}{9}$

d. $\frac{6}{8} < \frac{7}{16}$

2. Which group of fractions are all closer to the benchmark fraction 1 than 0 or $\frac{1}{2}$?

a. $\frac{3}{4}, \frac{8}{15}, \frac{1}{8}$

b. $\frac{4}{10}, \frac{7}{13}, \frac{1}{9}$

c. $\frac{6}{5}, \frac{4}{10}, \frac{2}{11}$

d. $\frac{6}{7}, \frac{17}{16}, \frac{8}{10}$

3. Richard's teacher wrote that $\frac{3}{5} < \frac{10}{12}$. Which of Richard's explanations is correct?

a. My teacher is incorrect. $\frac{3}{5}$ is greater than $\frac{10}{12}$ because the unti fraction $\frac{1}{5}$ is greater than the unit fraction $\frac{1}{12}$.

b. My teacher is correct. $\frac{3}{5}$ is less than $\frac{10}{12}$ because $\frac{3}{5}$ is close to $\frac{1}{2}$ and $\frac{10}{12}$ is close to 1.

c. My My teacher is correct. $\frac{3}{5}$ is less than $\frac{10}{12}$ because 10 is greater than 3 and 12 is greater than 5.

d. My teacher is incorrect. Both $\frac{3}{5}$ and $\frac{10}{12}$ are close to 1, so they are equal.

4. What benchmark fraction are the following fractions closest to?

$$\frac{3}{7}, \frac{9}{16}, \frac{4}{9}, \frac{6}{10}, \frac{2}{5}, \frac{12}{23}, \frac{7}{13}$$

a. These fractions are closest to 0.

b. These fractions are closest to $\frac{1}{2}$.

c. These fractions are closest to 1.

d. This is impossible to answer because there is no benchmark fraction they are all closest to.

Additional Practice

1. Which fraction is the smallest: $\frac{5}{9}$, $\frac{5}{6}$, $\frac{5}{10}$, or $\frac{5}{3}$?

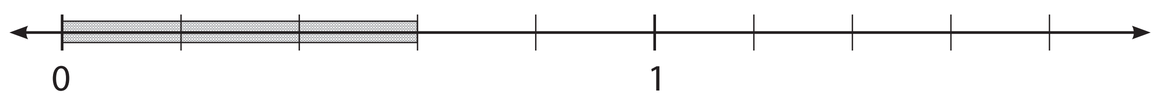
a. $\frac{5}{9}$

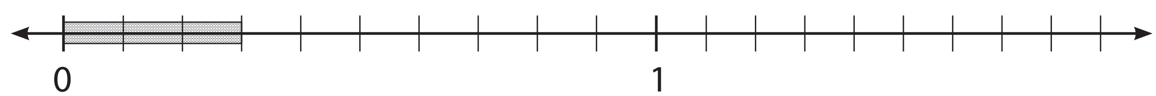
b. $\frac{5}{6}$

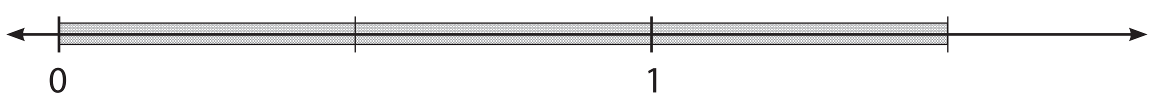
c. $\frac{5}{10}$

d. $\frac{5}{3}$

2. Sara drew representations of fractions that she thinks are greater than $\frac{3}{7}$ and that have the same numerator. Which representation is correct?

a. 

b. 

c. 

d. 

3. Which answer shows the correct comparison of $\frac{8}{3}$ and $\frac{8}{7}$?

a. $\frac{8}{3} < \frac{8}{7}$

b. $\frac{8}{3} = \frac{8}{7}$

c. $\frac{8}{3} > \frac{8}{7}$

d. None of the above. The fractions cannot be compared.

4. Which fraction is the least or the smallest: $\frac{4}{3}$, $\frac{4}{10}$, $\frac{4}{7}$, or $\frac{4}{6}$?

a. $\frac{4}{3}$

b. $\frac{4}{10}$

c. $\frac{4}{7}$

d. $\frac{4}{7}$

Additional Practice

1. Amie, John, Mia, and Daniel were told to order this set of fractions: $\frac{3}{5}, \frac{1}{7}, \frac{8}{9}, \frac{5}{6}$ from least to greatest. Which student has the correct answer and correct explanation?

a. Amie said that the correct order is $\frac{1}{7}, \frac{3}{5}, \frac{5}{6}, \frac{8}{9}$ because the numerators are in order from least to greatest.

b. John said that the correct order is $\frac{1}{7}, \frac{3}{5}, \frac{5}{6}, \frac{8}{9}$ because $\frac{1}{7}$ is close to 0, so it is least; $\frac{3}{5}$ is close to $\frac{1}{2}$, so it is next; and $\frac{8}{9}$ and $\frac{5}{6}$ are both close to 1, but $\frac{8}{9}$ is larger than $\frac{5}{6}$ because it is closer to 1.

c. Mia said that the correct order is $\frac{1}{7}, \frac{3}{5}, \frac{5}{6}, \frac{8}{9}$ because $\frac{1}{7}$ is close to 0, so it is least; $\frac{3}{5}$ is close to $\frac{1}{2}$, so it is next; and $\frac{8}{9}$ and $\frac{5}{6}$ are both close to 1, but $\frac{5}{6}$ is closer to 1.

d. Daniel said that the correct order is $\frac{8}{9}, \frac{1}{7}, \frac{5}{6}, \frac{3}{5}$ because the largest number in the denominator means that the parts of the whole are smaller, so $\frac{8}{9}$ would be the least fraction.

2. Order these fractions from greatest to least: $\frac{6}{4}, \frac{6}{8}, \frac{3}{10}, \frac{3}{7}$

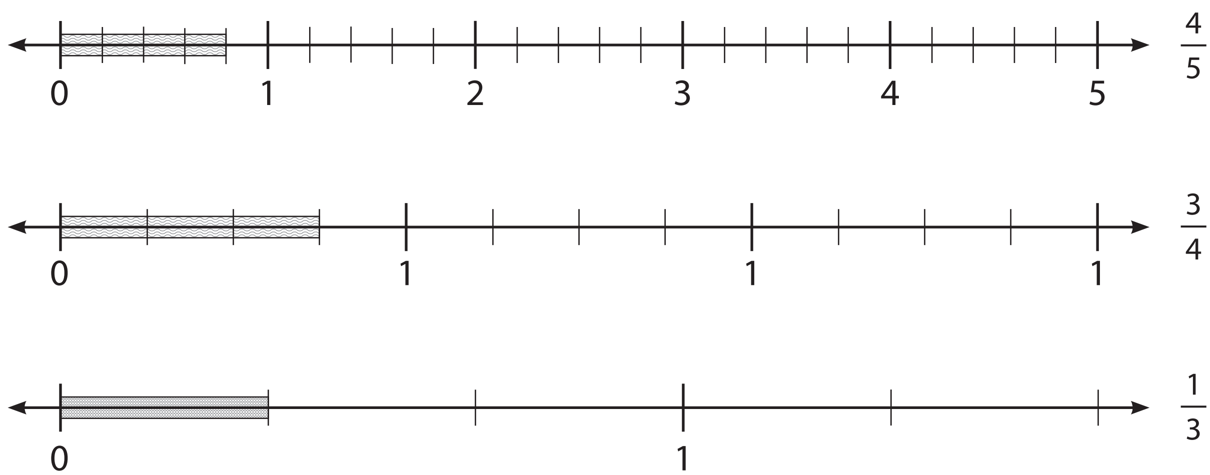
a. $\frac{6}{4}, \frac{6}{8}, \frac{3}{10}, \frac{3}{7}$

b. $\frac{3}{10}, \frac{3}{7}, \frac{6}{4}, \frac{6}{8}$

c. $\frac{3}{10}, \frac{3}{7}, \frac{6}{8}, \frac{6}{4}$

d. $\frac{3}{7}, \frac{3}{10}, \frac{6}{4}, \frac{6}{8}$

3. Ben drew these representations of fractions. Which comparison below is correct?



a. $\frac{4}{5}$ is less than $\frac{3}{4}$ and $\frac{1}{3}$, which are equal.

b. $\frac{3}{4}$ is equal to $\frac{1}{3}$.

c. The order of these fractions from least to greatest is $\frac{4}{5}$, $\frac{3}{4}$, $\frac{1}{3}$ because they are represented on the number line, using the whole from 0 to 1.

d. The order of these fractions cannot be determined because the whole is not the same.

4. Select the correct comparison relationship and explanation for $\frac{4}{5}$ and $\frac{2}{7}$.

a. $\frac{4}{5}$ is greater than $\frac{2}{7}$ because $\frac{4}{5}$ is close to 1 and $\frac{2}{7}$ is close to $\frac{1}{2}$, which is less than 1.

b. $\frac{2}{7}$ is less than $\frac{4}{5}$ because 7 – 2 is 5 parts remaining from $\frac{2}{7}$ and 5 – 4 is only 1 part remaining from $\frac{4}{5}$.

c. $\frac{4}{5}$ is greater than $\frac{2}{7}$ because the numerator 4 is greater than the numerator 2.

d. $\frac{4}{5}$ is less than $\frac{2}{7}$ because the denominator of 5 is less than the denominator of 7.

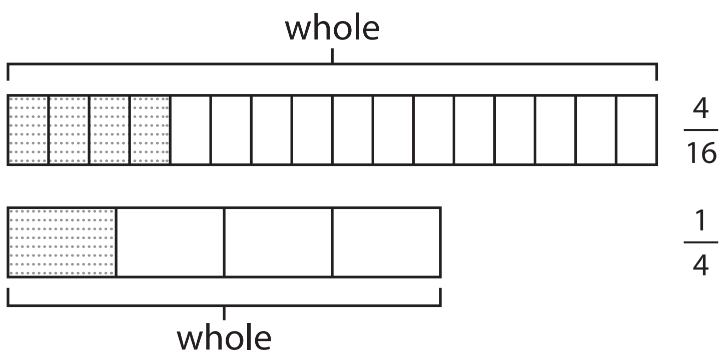
Additional Practice

1. Tiffany said that the fractions $\frac{4}{16}$ and $\frac{1}{4}$ are equivalent. Is she correct? Select the answer that has a correct explanation or model.

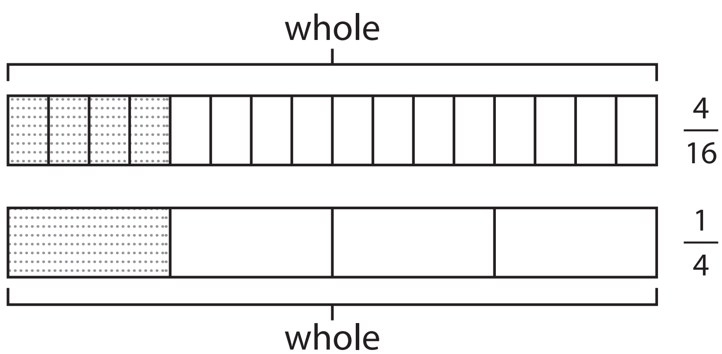
a. Yes, because both fractions include the number 4.

b. No, $\frac{4}{16} > \frac{1}{4}$ because 16 is greater than 4 and 4 is greater than 1.

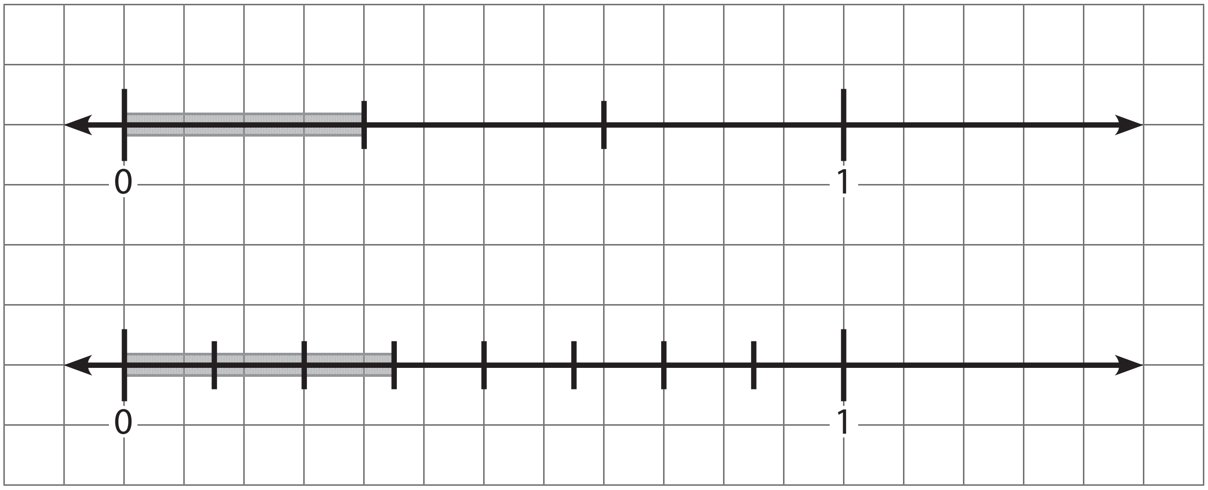
c. No, as shown by these models:



d. Yes, as shown by these models:



2. Which answer shows the correct comparison symbol shown by this model? The whole is the distance from 0 to 1.



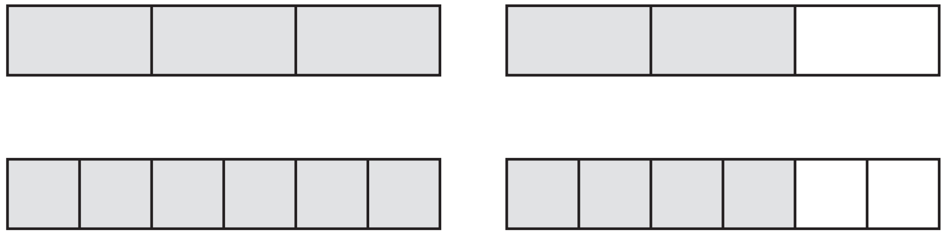
a. $\frac{1}{3} > \frac{3}{9}$

b. $\frac{1}{3} < \frac{3}{9}$

c. $\frac{1}{3} = \frac{3}{9}$

d. $\frac{1}{3} = \frac{3}{10}$

3. The teacher displayed these 2 rectangular models on the board:



The whole is 1 rectangle.

Which answer is correct?

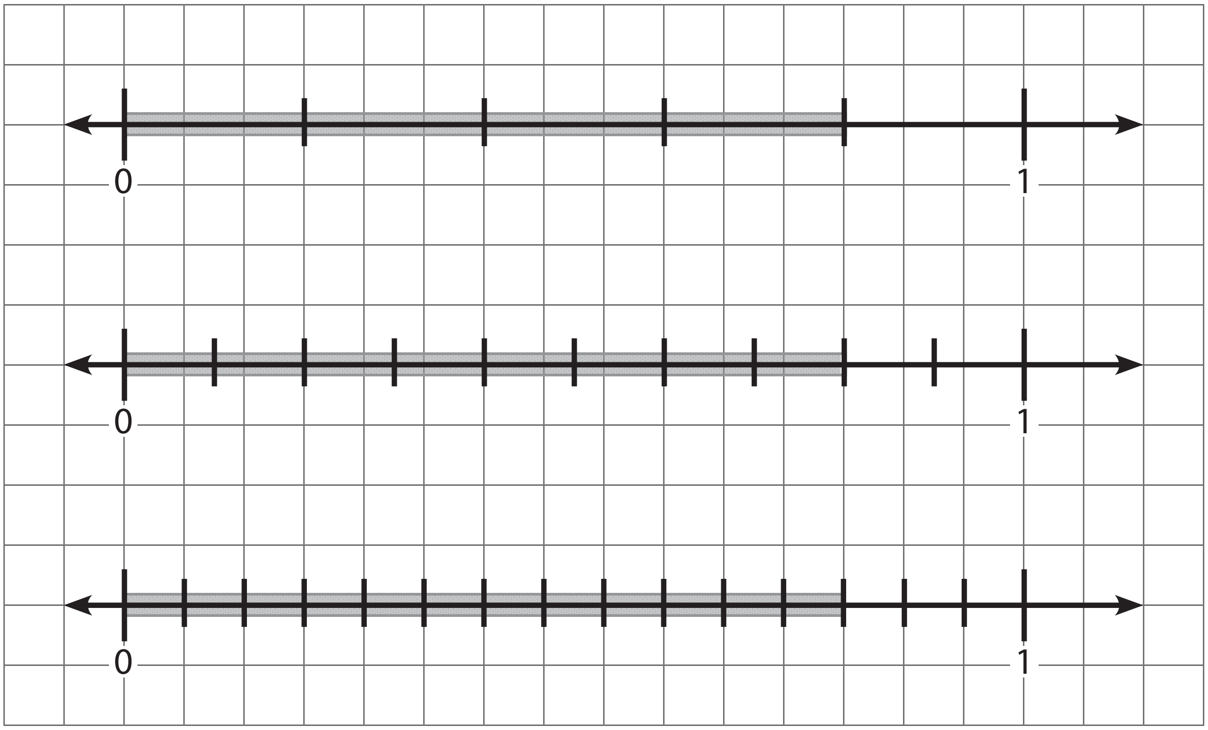
a. Danny said the models show $\frac{5}{6} = \frac{10}{12}$.

b. Camila said that the models show $\frac{5}{3} = \frac{10}{6}$.

c. Samuel said that the models show $\frac{5}{3} < \frac{10}{12}$.

d. Austin said that the models show $\frac{5}{3} = \frac{10}{12}$.

4. Choose the correct equivalence statement that represents this model:



a. $\frac{4}{5} = \frac{8}{10} = \frac{12}{15}$

b. $\frac{4}{6} = \frac{8}{11} = \frac{12}{16}$

c. $\frac{4}{5} = \frac{8}{12} = \frac{12}{18}$

d. $\frac{1}{4} = \frac{2}{9} = \frac{3}{12}$

Additional Practice

1. Santiago said that $\frac{1}{3} = \frac{6}{8}$. Is she correct?

a. Yes, because when you add 5 to the numerator and denominator of $\frac{1}{3}$, that is equal to $\frac{6}{8}$.

b. Yes, because when you subtract the 3 and 1 of $\frac{1}{3}$, the difference is 2, and when you subtract the 89 and 6 of $\frac{6}{8}$, the difference is also 2.

c. Yes, because both fractions are close to $\frac{1}{2}$.

d. No, because $\frac{1 \times 6}{3 \times 6}$ does not equal $\frac{6}{8}$.

2. Which fraction is equivalent to $\frac{2}{7}$?

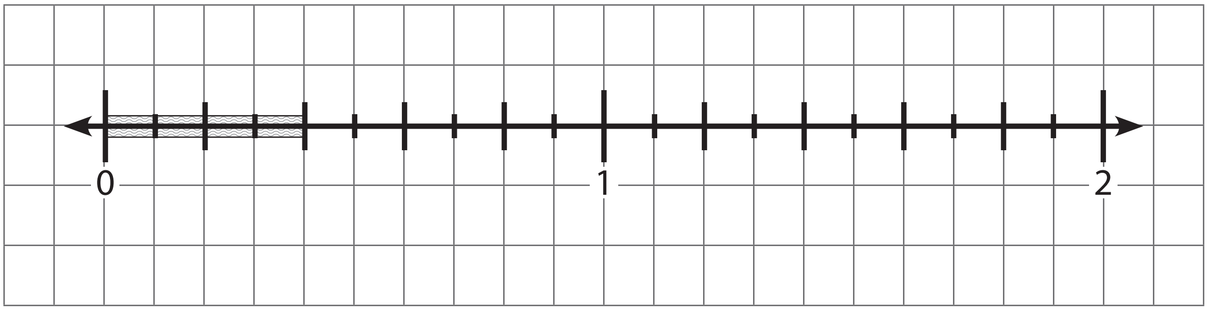
a. $\frac{5}{10}$

b. $\frac{6}{11}$

c. $\frac{6}{21}$

d. $\frac{3}{8}$

3. Mary drew a number line model to represent $\frac{2}{5} = \frac{4}{10}$. The whole is the distance from 0 to 1. What mistake did Mary make when she drew this model?



a. Mary drew a representation for $\frac{1}{5}$.

b. Mary drew a representation of $\frac{4}{11}$.

c. Mary did not make a mistake.

d. Mary partitioned the whole into twelfths.

4. Is $\frac{18}{24}$ equivalent to $\frac{3}{4}$?

a. No. If you divide the numerator and denominator by 3, the equivalent fraction is $\frac{6}{8}$.

b. Yes. If you subtract 15 from 18, the answer is 3 and if you subtract 20 from 24, the answer is 4.

c. No, 18 and 24 do not have a common denominator.

d. Yes. The common factor of 18 and 24 is 6, so $\frac{18 \div 6}{24 \div 6}$ is equal to $\frac{3}{4}$.

Additional Practice

1. Which fraction is in simplest form of $\frac{8}{12}$?

a. $\frac{6}{9}$

b. $\frac{1}{2}$

c. $\frac{4}{6}$

d. $\frac{2}{3}$

2. Which fraction is in simplest form?

a. $\frac{14}{30}$

b. $\frac{6}{15}$

c. $\frac{4}{7}$

d. $\frac{8}{12}$

3. Michael said that $\frac{8}{12}$ is in simplest form. Is he correct?

a. Yes, because 8 and 12 have common factors of 2 and 4.

b. Yes, because you cannot divide 8 and 12 by the factor 3.

c. No, because you can subtract 2 from both 8 and 12 and you will get the fraction $\frac{6}{10}$.

d. Yes, because 8 and 12 cannot be divided by a common factor.

4. Koa wrote a fraction that has an even number in the numerator and an odd number in the denominator. Can the fraction be in simplest form?

a. No, because both even numbers and odd numbers are divisible by 2, which would be a common factor.

b. Yes, because the numerator and denominator won't have any factor in common.

c. No, because both even numbers and odd numbers are divisible by 3, which would be a common factor.

d. Yes, because you cannot subtract 2 from the numerator and the denominator.

Additional Practice

1. $2\frac{3}{9} + 1\frac{4}{9} =$

a. $3\frac{7}{18}$

b. $3\frac{1}{9}$

c. $3\frac{7}{9}$

d. $1\frac{2}{9}$

2. Which answer shows the difference of $2\frac{7}{10} - 1\frac{1}{10}$ in simplest form?

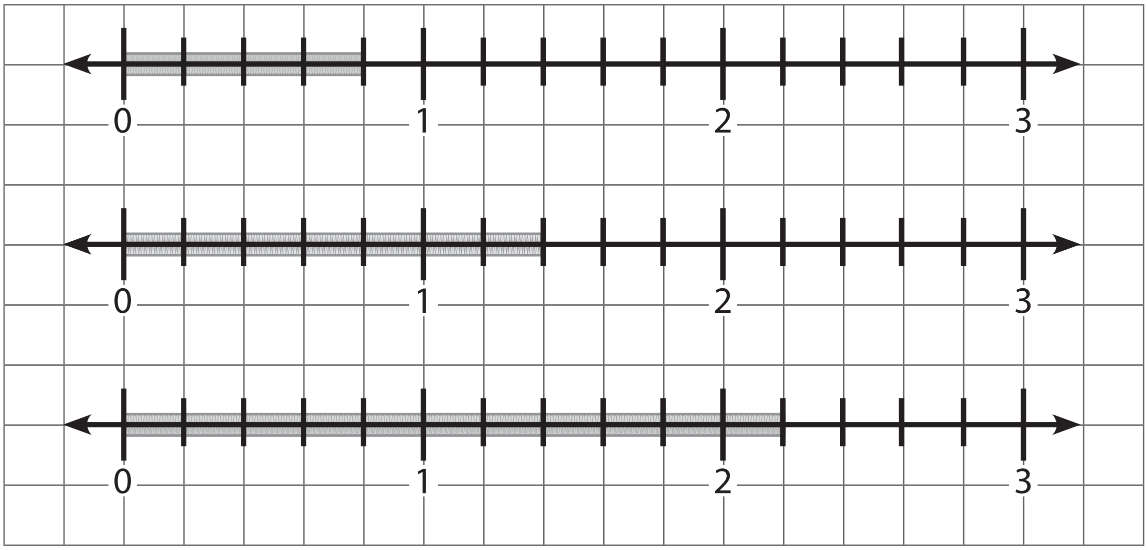
a. $1\frac{6}{10}$

b. $1\frac{3}{5}$

c. $3\frac{8}{10}$

d. $3\frac{4}{5}$

3. Which equation is represented by this model? The whole is the distance from 0 to 1.



a. $\frac{11}{10} - \frac{4}{10} = \frac{7}{11}$

b. $\frac{11}{4} - \frac{7}{4} = \frac{4}{4}$

c. $\frac{4}{6} + \frac{7}{6} = \frac{11}{6}$

d. $\frac{4}{5} + \frac{7}{5} = 2\frac{1}{5}$

4. Jenny and Josh are having a disagreement over the sum of $\frac{12}{4} - \frac{3}{4}$. Jenny said that the sum is $\frac{9}{4}$, but Josh said that the sum is $2\frac{1}{4}$. Who is correct and why?

a. Jenny and Josh are both correct. When you subtract $\frac{3}{4}$ from $\frac{12}{4}$, the answer is $\frac{9}{4}$. $\frac{9}{4}$ is equivalent to the mixed number $2\frac{1}{4}$.

b. Only Jenny is correct because when you subtract from 3 from 12, the answer is 9.

c. Only Josh is correct because $\frac{12}{4}$ is close to 3 and $\frac{3}{4}$ is a little less than 1.

d. Jenny and Josh are wrong. When you subtract $\frac{3}{4}$ from $\frac{7}{12}$, the answer is 9.

Additional Practice

1. Rachel said that the sum of $\frac{3}{4}$ and $\frac{2}{3}$ is about $\frac{1}{2}$.

A. Do you agree with Rachel? ___________

B. Explain why you agree or disagree. The rectangles below can be used, if needed, as a model to support your answer.

2. Juan was adding $\frac{2}{5} + \frac{1}{10}$. What is a reasonable estimate of the sum?

a. $\frac{1}{5}$ because if you add the fractions, you get $\frac{3}{15}$ which is $\frac{1}{5}$.

b. 1, because $\frac{2}{5}$ is close to 1 and $\frac{1}{10}$ makes it closer to 1.

c. $\frac{1}{2}$ because $\frac{2}{5}$ is close to $\frac{1}{2}$ and $\frac{1}{10}$ is close to 0.

d. 0 because $\frac{2}{5}$ and $\frac{1}{10}$ are both close to 0.

3. Martin thought the difference of $\frac{3}{4} - \frac{2}{3}$ was close to $\frac{1}{2}$.

A. Do you agree with Martin? ___________

B. Explain why you agree or disagree. The rectangles below can be used, if needed, as a model to support your answer.

4. Carol was subtracting $\frac{7}{8} - \frac{1}{4}$. Which of the following is a reasonable estimate of the difference?

a. $\frac{1}{2}$ because you would use a common denominator of 8 to get a difference of $\frac{5}{8}$ which is close to $\frac{1}{2}$.

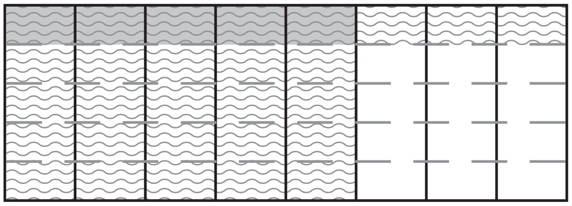
b. $\frac{6}{4}$ because 7 – 1 is 6 and 8 – 4 is 4.

c. 1, because $\frac{7}{8}$ is close to 1 and $\frac{1}{4}$ is close to 0.

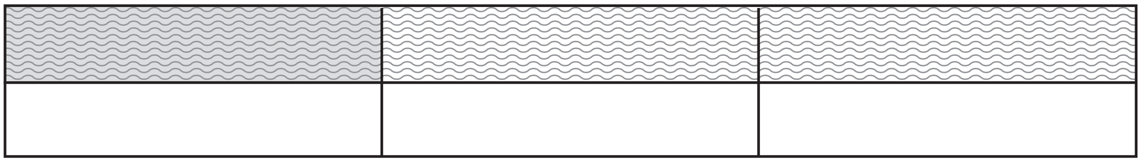
d. 0 because $\frac{7}{8}$ is very close to 1 and $\frac{7}{8}$ is close to 0.

Additional Practice

1. Draw a model that shows $\frac{5}{8} \times \frac{1}{5}$. Use the rectangle below.



2. Cora drew this model to show multiplication.



Which of the following could the model represent?

a. $\frac{1}{3} \times 2$

b. $\frac{2}{3} \times 1$

c. $\frac{2}{3} \times \frac{1}{2}$

d. $\frac{1}{3} \times \frac{1}{2}$

3. Which of the following has a product of $\frac{2}{3}$?

a. $\frac{4}{3} \times \frac{8}{9}$

b. $\frac{2}{3} \times \frac{1}{3}$

c. $\frac{3}{4} \times \frac{8}{9}$

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

4. What fraction can be multiplied times $\frac{3}{8}$ to get a product of $\frac{3}{16}$?

a. 2

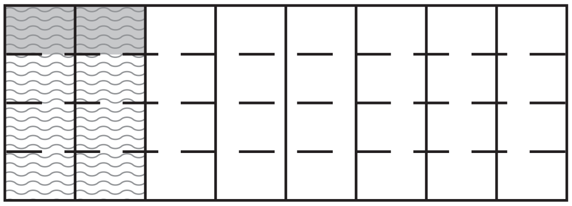
b. $\frac{1}{2}$

c. $\frac{3}{8}$

d. $\frac{1}{16}$

Additional Practice

1. What expression does this model represent?



a. $\frac{1}{8} \times \frac{1}{4}$

b. $\frac{1}{4} \times \frac{8}{8}$

c. $\frac{1}{4} \times \frac{1}{9}$

d. $\frac{2}{8} \times \frac{1}{4}$

2. What is the product of $\frac{4}{7}$ and $\frac{2}{5}$?

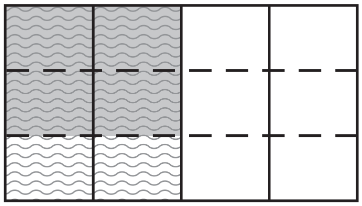
a. $\frac{6}{12}$

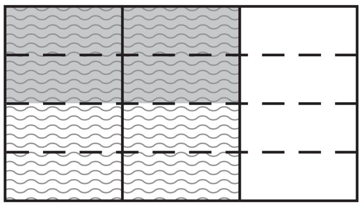
b. $\frac{8}{35}$

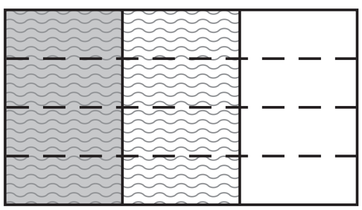
c. $\frac{6}{35}$

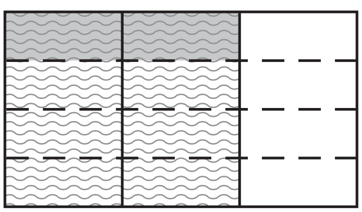
d. $\frac{2}{12}$

3. Which model represents $\frac{2}{4} \times \frac{2}{3}$?

a. 

b. 

c. 

d. 

4. What is $\frac{2}{3}$ of $\frac{6}{7}$?

a. $\frac{4}{7}$

b. $\frac{12}{10}$

c. $\frac{8}{21}$

d. $\frac{14}{12}$

Additional Practice

1. There is a group of people that would like to share 8 pizzas. Each person would get $\frac{2}{3}$ of a pizza. How many people are in the group?

A. How many people do you estimate are in the group? Find your estimate without doing any computations or using your pencil.

B. Draw a representation that could model the problem.

C. Write an equation that could be used to solve the problem.

2. What is the quotient of $3 \div \frac{1}{4}$?

a. $\frac{3}{4}$

b. $\frac{4}{3}$

c. $\frac{1}{12}$

d. 12

3. Juju is making snack bags for a hike. She is putting $\frac{3}{4}$ of nuts in a container. She has 9 oz. of nuts. How many containers can she make? Which expression below can be used to solve the problem?

a. $\frac{3}{4} \div 9$

b. $9 \div \frac{3}{4}$

c. $\frac{3}{4} \times 9$

d. $9 + \frac{3}{4}$

4. Carissa has $\frac{1}{3}$ of a pie left from dinner. She wants to share it with 3 of her friends. Which expression can be used to find the amount of the whole pie that each of the 4 people will get?

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

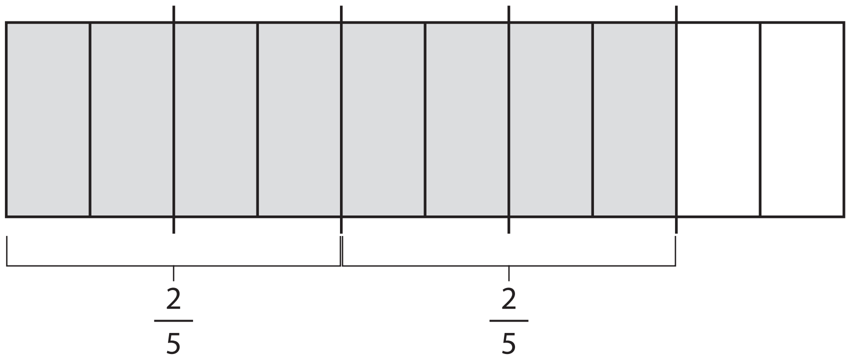
b. $4 \div \frac{2}{3}$

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

d. $4 - \frac{2}{3}$

Additional Practice

1. What equation does this model represent?



a. $\frac{8}{10} \div \frac{2}{5} = 2$

b. $\frac{8}{10} \times \frac{2}{5} = \frac{8}{25}$

c. $\frac{8}{5} \div \frac{1}{5} = 8$

d. $\frac{8}{5} \div \frac{2}{5} = 4$

2. What is the quotient of $\frac{4}{9} \div \frac{2}{3}$?

a. $\frac{2}{9}$

b. $\frac{2}{3}$

c. $\frac{1}{3}$

d. 2

3. Chris has some flour for baking. He needs to share it with his friends. He needs to give $\frac{3}{4}$ of a pound to each friend. If Chris has 6 pounds of flour, how many friends can he share the flour with?

a. He can share with 6 friends.
b. He can share with 24 friends.
c. He can share with 7 friends.
d. He can share with 8 friends.

4. Annie said that the quotient of $\frac{6}{3} \div \frac{4}{9}$ is $\frac{18}{4}$. Is Annie right?

a. No, the quotient is $\frac{18}{4}$.

b. No, the quotient is 2.

c. Yes, the quotient is $\frac{24}{27}$.

d. No, the quotient is $\frac{2}{6}$.

Additional Practice

1. Find the missing numbers in the problems.

A. $\frac{3}{4} + \frac{\square}{\square} = 1\frac{2}{3}$

B. $\frac{\square}{\square} - \frac{3}{8} = \frac{4}{3}$

C. $\frac{2}{5} \times \frac{\square}{\square} = \frac{1}{10}$

D. $\frac{2}{5} \div \frac{\square}{\square} = \frac{1}{2}$

2. Autumn and Jon multiplied $\frac{2}{5} \times \frac{3}{5}$. Autumn got the product of $\frac{6}{5}$. Jon's product was $\frac{6}{25}$. Who do you agree with? Why?

a. Autumn is correct because when you multiply fractions, you multiply numerators and keep the denominator the same.

b. Autumn is correct because when you multiply fractions with the same denominator, you only multiply the first factor by 3.

c. Jon is correct because you multiply the numerators and the denominators of the fraction factors.

d. Jon is correct because he multiplied 2×5 and added it to 3 x 5 to get the denominator.

3. Mya walked $\frac{1}{4}$ mile and then stopped at a store. She then walked $\frac{1}{3}$ mile to a restaurant. Which expression could be used to find how far she walked altogether?

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

b. $\frac{1}{4} - \frac{1}{3}$

c. $\frac{1}{4} \times \frac{1}{3}$

d. $\frac{1}{4} \div \frac{1}{3}$

4. How many groups of $\frac{1}{6}$ are in 30?

a. 180

b. 50

c. 5

d. $\frac{1}{5}$

Multiplication and Division

Timed Practice

Name ______________________________

Teacher ______________________________

Period ______________________________

Name: ____________________

Multiplication Timed Practice Sheet 1

Number Correct: ______

1 $\begin{array}{r} 8 \\ \times\ 2 \\ \hline \end{array}$	**2** $\begin{array}{r} 1 \\ \times\ 7 \\ \hline \end{array}$	**3** $\begin{array}{r} 5 \\ \times\ 8 \\ \hline \end{array}$	**4** $\begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$
5 $\begin{array}{r} 7 \\ \times\ 4 \\ \hline \end{array}$	**6** $\begin{array}{r} 6 \\ \times\ 6 \\ \hline \end{array}$	**7** $\begin{array}{r} 2 \\ \times\ 12 \\ \hline \end{array}$	**8** $\begin{array}{r} 4 \\ \times\ 5 \\ \hline \end{array}$
9 $\begin{array}{r} 7 \\ \times\ 6 \\ \hline \end{array}$	**10** $\begin{array}{r} 3 \\ \times\ 9 \\ \hline \end{array}$	**11** $\begin{array}{r} 11 \\ \times\ 5 \\ \hline \end{array}$	**12** $\begin{array}{r} 3 \\ \times\ 3 \\ \hline \end{array}$
13 $\begin{array}{r} 8 \\ \times\ 9 \\ \hline \end{array}$	**14** $\begin{array}{r} 2 \\ \times\ 4 \\ \hline \end{array}$	**15** $\begin{array}{r} 6 \\ \times\ 9 \\ \hline \end{array}$	**16** $\begin{array}{r} 4 \\ \times\ 12 \\ \hline \end{array}$
17 $\begin{array}{r} 9 \\ \times\ 6 \\ \hline \end{array}$	**18** $\begin{array}{r} 10 \\ \times\ 8 \\ \hline \end{array}$	**19** $\begin{array}{r} 2 \\ \times\ 9 \\ \hline \end{array}$	**20** $\begin{array}{r} 8 \\ \times\ 3 \\ \hline \end{array}$

Name: ____________________

Multiplication Timed Practice Sheet 2

Number Correct: ______

1 $\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$

2 $\begin{array}{r} 5 \\ \times\ 5 \\ \hline \end{array}$

3 $\begin{array}{r} 9 \\ \times\ 1 \\ \hline \end{array}$

4 $\begin{array}{r} 7 \\ \times\ 11 \\ \hline \end{array}$

5 $\begin{array}{r} 5 \\ \times\ 6 \\ \hline \end{array}$

6 $\begin{array}{r} 10 \\ \times\ 3 \\ \hline \end{array}$

7 $\begin{array}{r} 7 \\ \times\ 5 \\ \hline \end{array}$

8 $\begin{array}{r} 3 \\ \times\ 4 \\ \hline \end{array}$

9 $\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$

10 $\begin{array}{r} 4 \\ \times\ 7 \\ \hline \end{array}$

11 $\begin{array}{r} 12 \\ \times\ 6 \\ \hline \end{array}$

12 $\begin{array}{r} 7 \\ \times\ 8 \\ \hline \end{array}$

13 $\begin{array}{r} 7 \\ \times\ 10 \\ \hline \end{array}$

14 $\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$

15 $\begin{array}{r} 6 \\ \times\ 7 \\ \hline \end{array}$

16 $\begin{array}{r} 5 \\ \times\ 3 \\ \hline \end{array}$

17 $\begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array}$

18 $\begin{array}{r} 6 \\ \times\ 4 \\ \hline \end{array}$

19 $\begin{array}{r} 9 \\ \times\ 4 \\ \hline \end{array}$

20 $\begin{array}{r} 8 \\ \times\ 4 \\ \hline \end{array}$

Name: ____________________

Multiplication Timed Practice Sheet 3

Number Correct: ______

1 1×12	**2** 4×3	**3** 5×2	**4** 10×7
5 10×2	**6** 4×8	**7** 3×7	**8** 12×7
9 11×6	**10** 3×12	**11** 4×6	**12** 5×9
13 8×7	**14** 7×3	**15** 8×8	**16** 5×10
17 5×4	**18** 9×2	**19** 3×11	**20** 9×7

Name: ______________________________

Multiplication Timed Practice Sheet 4

Number Correct: ______

1 2×8	**2** 3×6	**3** 8×5	**4** 2×7
5 11×9	**6** 4×4	**7** 9×4	**8** 3×10
9 5×9	**10** 5×12	**11** 7×3	**12** 1×5
13 3×2	**14** 6×8	**15** 9×11	**16** 4×5
17 12×5	**18** 4×2	**19** 7×7	**20** 10×10

Name: ______________________

Multiplication Timed Practice Sheet 5

Number Correct: ______

1 4×6	**2** 9×3	**3** 5×11	**4** 10×5
5 5×7	**6** 2×10	**7** 3×1	**8** 12×5
9 8×6	**10** 6×12	**11** 6×2	**12** 7×7
13 4×7	**14** 5×3	**15** 3×8	**16** 12×2
17 9×3	**18** 11×4	**19** 7×4	**20** 9×10

Name: ______________________________

Multiplication Timed Practice Sheet 6

Number Correct: ______

1 4×3	**2** 3×6	**3** 7×5	**4** 6×4
5 8×10	**6** 2×2	**7** 11×2	**8** 5×5
9 3×5	**10** 4×8	**11** 7×9	**12** 8×12
13 2×10	**14** 1×8	**15** 6×11	**16** 11×12
17 12×8	**18** 10×6	**19** 2×5	**20** 9×7

Name: ____________________

Multiplication Timed Practice Sheet 7

Number Correct: ______

1 5×8	**2** 4×4	**3** 5×7	**4** 9×2
5 8×11	**6** 3×7	**7** 2×6	**8** 3×5
9 3×4	**10** 9×12	**11** 6×10	**12** 8×3
13 12×11	**14** 8×8	**15** 5×4	**16** 1×11
17 6×7	**18** 7×6	**19** 10×9	**20** 6×5

Name: ____________________

Multiplication Timed Practice Sheet 8

Number Correct: ______

1 3×10	**2** 9×6	**3** 11×2	**4** 6×10
5 7×9	**6** 8×7	**7** 5×2	**8** 4×11
9 4×1	**10** 6×9	**11** 6×5	**12** 8×5
13 10×3	**14** 11×7	**15** 2×12	**16** 9×9
17 6×8	**18** 2×3	**19** 7×12	**20** 4×2

Name: ______________________________

Multiplication Timed Practice Sheet 9

Number Correct: ______

1 $\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$	**2** $\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$	**3** $\begin{array}{r} 11 \\ \times\ \ 8 \\ \hline \end{array}$	**4** $\begin{array}{r} 2 \\ \times\ 6 \\ \hline \end{array}$
5 $\begin{array}{r} 5 \\ \times\ 6 \\ \hline \end{array}$	**6** $\begin{array}{r} 8 \\ \times\ 9 \\ \hline \end{array}$	**7** $\begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array}$	**8** $\begin{array}{r} 10 \\ \times\ \ 4 \\ \hline \end{array}$
9 $\begin{array}{r} 12 \\ \times\ \ 3 \\ \hline \end{array}$	**10** $\begin{array}{r} 11 \\ \times\ 11 \\ \hline \end{array}$	**11** $\begin{array}{r} 4 \\ \times\ 10 \\ \hline \end{array}$	**12** $\begin{array}{r} 7 \\ \times\ 8 \\ \hline \end{array}$
13 $\begin{array}{r} 3 \\ \times\ 9 \\ \hline \end{array}$	**14** $\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$	**15** $\begin{array}{r} 8 \\ \times\ 2 \\ \hline \end{array}$	**16** $\begin{array}{r} 12 \\ \times\ \ 9 \\ \hline \end{array}$
17 $\begin{array}{r} 11 \\ \times\ \ 3 \\ \hline \end{array}$	**18** $\begin{array}{r} 10 \\ \times\ \ 7 \\ \hline \end{array}$	**19** $\begin{array}{r} 1 \\ \times\ 6 \\ \hline \end{array}$	**20** $\begin{array}{r} 2 \\ \times\ 8 \\ \hline \end{array}$

Name: ____________________

Multiplication Timed Practice Sheet 10

Number Correct: ______

1 $\begin{array}{r} 3 \\ \times\ 8 \\ \hline \end{array}$	**2** $\begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$	**3** $\begin{array}{r} 3 \\ \times\ 3 \\ \hline \end{array}$	**4** $\begin{array}{r} 10 \\ \times\ \ 1 \\ \hline \end{array}$
5 $\begin{array}{r} 2 \\ \times\ 5 \\ \hline \end{array}$	**6** $\begin{array}{r} 2 \\ \times\ 11 \\ \hline \end{array}$	**7** $\begin{array}{r} 9 \\ \times\ 9 \\ \hline \end{array}$	**8** $\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$
9 $\begin{array}{r} 2 \\ \times\ 9 \\ \hline \end{array}$	**10** $\begin{array}{r} 6 \\ \times\ 6 \\ \hline \end{array}$	**11** $\begin{array}{r} 2 \\ \times\ 3 \\ \hline \end{array}$	**12** $\begin{array}{r} 12 \\ \times\ \ 3 \\ \hline \end{array}$
13 $\begin{array}{r} 2 \\ \times\ 7 \\ \hline \end{array}$	**14** $\begin{array}{r} 12 \\ \times\ 10 \\ \hline \end{array}$	**15** $\begin{array}{r} 8 \\ \times\ 4 \\ \hline \end{array}$	**16** $\begin{array}{r} 11 \\ \times\ \ 8 \\ \hline \end{array}$
17 $\begin{array}{r} 11 \\ \times\ \ 4 \\ \hline \end{array}$	**18** $\begin{array}{r} 5 \\ \times\ 5 \\ \hline \end{array}$	**19** $\begin{array}{r} 10 \\ \times\ 11 \\ \hline \end{array}$	**20** $\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$

Name: ______________________________

Division Timed Practice Sheet 1

Number Correct: ______

1 $7\overline{)21}$	**2** $5\overline{)10}$	**3** $2\overline{)14}$	**4** $9\overline{)27}$
5 $6\overline{)24}$	**6** $10\overline{)70}$	**7** $8\overline{)32}$	**8** $6\overline{)36}$
9 $3\overline{)9}$	**10** $5\overline{)35}$	**11** $1\overline{)8}$	**12** $12\overline{)24}$
13 $2\overline{)20}$	**14** $8\overline{)40}$	**15** $3\overline{)15}$	**16** $4\overline{)32}$
17 $4\overline{)28}$	**18** $7\overline{)42}$	**19** $9\overline{)63}$	**20** $6\overline{)66}$

Name: ____________________

Division Timed Practice Sheet 2

Number Correct: ______

1 $2\overline{)10}$	**2** $3\overline{)27}$	**3** $3\overline{)21}$	**4** $7\overline{)14}$
5 $6\overline{)30}$	**6** $1\overline{)6}$	**7** $6\overline{)54}$	**8** $12\overline{)60}$
9 $3\overline{)36}$	**10** $4\overline{)24}$	**11** $5\overline{)25}$	**12** $10\overline{)80}$
13 $8\overline{)16}$	**14** $11\overline{)44}$	**15** $8\overline{)24}$	**16** $5\overline{)30}$
17 $9\overline{)54}$	**18** $6\overline{)60}$	**19** $8\overline{)72}$	**20** $7\overline{)56}$

Name: ____________________

Division Timed Practice Sheet 3

Number Correct: ______

1	$11\overline{)66}$	**2**	$2\overline{)18}$	**3**	$6\overline{)42}$	**4**	$7\overline{)63}$
5	$5\overline{)45}$	**6**	$3\overline{)24}$	**7**	$9\overline{)36}$	**8**	$1\overline{)12}$
9	$4\overline{)20}$	**10**	$10\overline{)30}$	**11**	$9\overline{)36}$	**12**	$9\overline{)90}$
13	$8\overline{)80}$	**14**	$3\overline{)18}$	**15**	$8\overline{)24}$	**16**	$4\overline{)16}$
17	$7\overline{)35}$	**18**	$6\overline{)18}$	**19**	$9\overline{)99}$	**20**	$12\overline{)120}$

Name: ______________________________

Division Timed Practice Sheet 4

Number Correct: ______

1 $5\overline{)15}$	**2** $11\overline{)55}$	**3** $4\overline{)12}$	**4** $9\overline{)45}$
5 $7\overline{)28}$	**6** $4\overline{)36}$	**7** $1\overline{)7}$	**8** $10\overline{)60}$
9 $2\overline{)16}$	**10** $5\overline{)40}$	**11** $8\overline{)56}$	**12** $2\overline{)24}$
13 $9\overline{)18}$	**14** $11\overline{)88}$	**15** $12\overline{)48}$	**16** $7\overline{)49}$
17 $7\overline{)56}$	**18** $3\overline{)6}$	**19** $4\overline{)40}$	**20** $6\overline{)30}$

Name: ____________________

Division Timed Practice Sheet 5

Number Correct: ______

1 $3\overline{)21}$	**2** $6\overline{)12}$	**3** $3\overline{)36}$	**4** $3\overline{)15}$
5 $9\overline{)36}$	**6** $8\overline{)48}$	**7** $3\overline{)12}$	**8** $10\overline{)90}$
9 $4\overline{)24}$	**10** $5\overline{)60}$	**11** $11\overline{)33}$	**12** $8\overline{)64}$
13 $1\overline{)4}$	**14** $4\overline{)28}$	**15** $6\overline{)48}$	**16** $5\overline{)55}$
17 $12\overline{)24}$	**18** $7\overline{)70}$	**19** $9\overline{)27}$	**20** $12\overline{)96}$

Name: ______________________________

Division Timed Practice Sheet 6

Number Correct: ______

1 $2\overline{)20}$

2 $8\overline{)16}$

3 $5\overline{)20}$

4 $1\overline{)3}$

5 $5\overline{)35}$

6 $4\overline{)44}$

7 $6\overline{)48}$

8 $11\overline{)110}$

9 $3\overline{)18}$

10 $2\overline{)4}$

11 $3\overline{)27}$

12 $6\overline{)72}$

13 $9\overline{)81}$

14 $3\overline{)24}$

15 $10\overline{)20}$

16 $4\overline{)48}$

17 $6\overline{)30}$

18 $10\overline{)110}$

19 $9\overline{)54}$

20 $7\overline{)28}$

Name: ______________________________

Division Timed Practice Sheet 7

Number Correct: ______

1	$2\overline{)10}$	**2**	$8\overline{)40}$	**3**	$3\overline{)9}$	**4**	$11\overline{)55}$
5	$8\overline{)56}$	**6**	$8\overline{)32}$	**7**	$7\overline{)63}$	**8**	$2\overline{)22}$
9	$4\overline{)36}$	**10**	$10\overline{)80}$	**11**	$8\overline{)64}$	**12**	$12\overline{)72}$
13	$5\overline{)15}$	**14**	$9\overline{)63}$	**15**	$7\overline{)77}$	**16**	$6\overline{)18}$
17	$5\overline{)50}$	**18**	$6\overline{)36}$	**19**	$6\overline{)24}$	**20**	$1\overline{)9}$

Name: ________________________________

Division Timed Practice Sheet 8

Number Correct: ______

1 $9\overline{)45}$	**2** $11\overline{)66}$	**3** $2\overline{)4}$	**4** $2\overline{)12}$
5 $1\overline{)5}$	**6** $12\overline{)108}$	**7** $5\overline{)55}$	**8** $7\overline{)49}$
9 $5\overline{)60}$	**10** $4\overline{)8}$	**11** $4\overline{)32}$	**12** $10\overline{)40}$
13 $7\overline{)84}$	**14** $7\overline{)21}$	**15** $12\overline{)144}$	**16** $6\overline{)54}$
17 $9\overline{)81}$	**18** $11\overline{)99}$	**19** $4\overline{)40}$	**20** $5\overline{)50}$

Name: ____________________

Division Timed Practice Sheet 9

Number Correct: ______

1 $11\overline{)22}$	**2** $4\overline{)12}$	**3** $6\overline{)66}$	**4** $5\overline{)30}$
5 $4\overline{)16}$	**6** $2\overline{)6}$	**7** $5\overline{)45}$	**8** $10\overline{)120}$
9 $10\overline{)40}$	**10** $8\overline{)88}$	**11** $8\overline{)72}$	**12** $12\overline{)36}$
13 $2\overline{)14}$	**14** $11\overline{)121}$	**15** $7\overline{)35}$	**16** $1\overline{)10}$
17 $4\overline{)48}$	**18** $9\overline{)72}$	**19** $12\overline{)84}$	**20** $3\overline{)33}$

Name: ______________________________

Division Timed Practice Sheet 10

Number Correct: ______

1 $10\overline{)70}$	**2** $6\overline{)12}$	**3** $2\overline{)8}$	**4** $3\overline{)12}$
5 $5\overline{)25}$	**6** $6\overline{)42}$	**7** $5\overline{)20}$	**8** $3\overline{)30}$
9 $2\overline{)18}$	**10** $10\overline{)100}$	**11** $4\overline{)12}$	**12** $8\overline{)48}$
13 $7\overline{)42}$	**14** $12\overline{)36}$	**15** $4\overline{)48}$	**16** $11\overline{)77}$
17 $9\overline{)72}$	**18** $1\overline{)11}$	**19** $3\overline{)33}$	**20** $5\overline{)10}$

Name: ______________________________

Mixed Facts Timed Practice Sheet 1

Number Correct: ______

1 $\begin{array}{r} 4 \\ \times\ 7 \\ \hline \end{array}$

2 $2\overline{)16}$

3 $\begin{array}{r} 4 \\ \times\ 5 \\ \hline \end{array}$

4 $7\overline{)21}$

5 $\begin{array}{r} 11 \\ \times\ \ 1 \\ \hline \end{array}$

6 $7\overline{)56}$

7 $\begin{array}{r} 8 \\ \times\ 8 \\ \hline \end{array}$

8 $\begin{array}{r} 3 \\ \times\ 4 \\ \hline \end{array}$

9 $4\overline{)36}$

10 $3\overline{)18}$

11 $8\overline{)64}$

12 $\begin{array}{r} 3 \\ \times\ 12 \\ \hline \end{array}$

13 $9\overline{)45}$

14 $7\overline{)70}$

15 $\begin{array}{r} 7 \\ \times\ 6 \\ \hline \end{array}$

16 $\begin{array}{r} 10 \\ \times\ \ 6 \\ \hline \end{array}$

17 $\begin{array}{r} 8 \\ \times\ 2 \\ \hline \end{array}$

18 $\begin{array}{r} 9 \\ \times\ 6 \\ \hline \end{array}$

19 $5\overline{)20}$

20 $5\overline{)55}$

Name: ______________________________

Mixed Facts Timed Practice Sheet 2

Number Correct: ______

1 $\begin{array}{r} 2 \\ \times\ 9 \\ \hline \end{array}$

2 $\begin{array}{r} 5 \\ \times\ 10 \\ \hline \end{array}$

3 $2\overline{)\,12}$

4 $\begin{array}{r} 5 \\ \times\ 7 \\ \hline \end{array}$

5 $6\overline{)\,42}$

6 $\begin{array}{r} 11 \\ \times\ \ 4 \\ \hline \end{array}$

7 $\begin{array}{r} 7 \\ \times\ 8 \\ \hline \end{array}$

8 $8\overline{)\,32}$

9 $6\overline{)\,54}$

10 $3\overline{)\,33}$

11 $\begin{array}{r} 5 \\ \times\ 12 \\ \hline \end{array}$

12 $1\overline{)\,12}$

13 $\begin{array}{r} 12 \\ \times\ \ 2 \\ \hline \end{array}$

14 $4\overline{)\,16}$

15 $\begin{array}{r} 6 \\ \times\ 9 \\ \hline \end{array}$

16 $\begin{array}{r} 3 \\ \times\ 6 \\ \hline \end{array}$

17 $12\overline{)\,24}$

18 $\begin{array}{r} 3 \\ \times\ 8 \\ \hline \end{array}$

19 $10\overline{)\,20}$

20 $4\overline{)\,8}$

Name: ______________________________

Mixed Facts Timed Practice Sheet 3

Number Correct: ______

1 $\begin{array}{r} 8 \\ \times\ 5 \\ \hline \end{array}$

2 $3\overline{)12}$

3 $\begin{array}{r} 4 \\ \times\ 8 \\ \hline \end{array}$

4 $8\overline{)56}$

5 $\begin{array}{r} 7 \\ \times\ 7 \\ \hline \end{array}$

6 $10\overline{)60}$

7 $4\overline{)8}$

8 $\begin{array}{r} 6 \\ \times\ 1 \\ \hline \end{array}$

9 $10\overline{)100}$

10 $\begin{array}{r} 9 \\ \times\ 2 \\ \hline \end{array}$

11 $9\overline{)99}$

12 $\begin{array}{r} 3 \\ \times\ 5 \\ \hline \end{array}$

13 $\begin{array}{r} 10 \\ \times\ 11 \\ \hline \end{array}$

14 $\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$

15 $3\overline{)27}$

16 $\begin{array}{r} 12 \\ \times\ 4 \\ \hline \end{array}$

17 $8\overline{)40}$

18 $\begin{array}{r} 7 \\ \times\ 9 \\ \hline \end{array}$

19 $5\overline{)35}$

20 $12\overline{)36}$

Name: ____________________

Mixed Facts Timed Practice Sheet 4

Number Correct: ______

1 $\begin{array}{r} 4 \\ \times\ 6 \\ \hline \end{array}$	**2** $5\overline{)40}$	**3** $\begin{array}{r} 2 \\ \times\ 11 \\ \hline \end{array}$	**4** $3\overline{)21}$
5 $1\overline{)7}$	**6** $\begin{array}{r} 12 \\ \times\ 6 \\ \hline \end{array}$	**7** $4\overline{)12}$	**8** $\begin{array}{r} 2 \\ \times\ 10 \\ \hline \end{array}$
9 $\begin{array}{r} 6 \\ \times\ 8 \\ \hline \end{array}$	**10** $5\overline{)50}$	**11** $\begin{array}{r} 3 \\ \times\ 3 \\ \hline \end{array}$	**12** $9\overline{)72}$
13 $\begin{array}{r} 8 \\ \times\ 10 \\ \hline \end{array}$	**14** $\begin{array}{r} 7 \\ \times\ 4 \\ \hline \end{array}$	**15** $11\overline{)99}$	**16** $\begin{array}{r} 5 \\ \times\ 9 \\ \hline \end{array}$
17 $12\overline{)60}$	**18** $6\overline{)36}$	**19** $\begin{array}{r} 3 \\ \times\ 5 \\ \hline \end{array}$	**20** $7\overline{)28}$

Name: ____________________

Mixed Facts Timed Practice Sheet 5

Number Correct: ______

1 $\begin{array}{r} 10 \\ \times\ 2 \\ \hline \end{array}$

2 $\begin{array}{r} 3 \\ \times\ 11 \\ \hline \end{array}$

3 $3\overline{)15}$

4 $11\overline{)55}$

5 $12\overline{)24}$

6 $\begin{array}{r} 7 \\ \times\ 5 \\ \hline \end{array}$

7 $\begin{array}{r} 9 \\ \times\ 1 \\ \hline \end{array}$

8 $\begin{array}{r} 9 \\ \times\ 7 \\ \hline \end{array}$

9 $\begin{array}{r} 8 \\ \times\ 4 \\ \hline \end{array}$

10 $\begin{array}{r} 11 \\ \times\ 7 \\ \hline \end{array}$

11 $3\overline{)12}$

12 $4\overline{)20}$

13 $7\overline{)35}$

14 $9\overline{)36}$

15 $\begin{array}{r} 12 \\ \times\ 10 \\ \hline \end{array}$

16 $\begin{array}{r} 8 \\ \times\ 9 \\ \hline \end{array}$

17 $\begin{array}{r} 9 \\ \times\ 9 \\ \hline \end{array}$

18 $8\overline{)48}$

19 $6\overline{)60}$

20 $4\overline{)24}$

Name: ______________________________

Mixed Facts Timed Practice Sheet 6

Number Correct: ______

1 $\begin{array}{r} 3 \\ \times\ 9 \\ \hline \end{array}$

2 $5\overline{)30}$

3 $4\overline{)28}$

4 $\begin{array}{r} 10 \\ \times\ 8 \\ \hline \end{array}$

5 $\begin{array}{r} 8 \\ \times\ 7 \\ \hline \end{array}$

6 $\begin{array}{r} 7 \\ \times\ 3 \\ \hline \end{array}$

7 $2\overline{)20}$

8 $5\overline{)25}$

9 $6\overline{)24}$

10 $\begin{array}{r} 2 \\ \times\ 12 \\ \hline \end{array}$

11 $\begin{array}{r} 11 \\ \times\ 2 \\ \hline \end{array}$

12 $12\overline{)48}$

13 $1\overline{)11}$

14 $11\overline{)44}$

15 $\begin{array}{r} 9 \\ \times\ 9 \\ \hline \end{array}$

16 $\begin{array}{r} 5 \\ \times\ 3 \\ \hline \end{array}$

17 $5\overline{)15}$

18 $\begin{array}{r} 9 \\ \times\ 4 \\ \hline \end{array}$

19 $6\overline{)48}$

20 $\begin{array}{r} 3 \\ \times\ 10 \\ \hline \end{array}$

Name: ____________________

Mixed Facts Timed Practice Sheet 7

Number Correct: ______

1 $\begin{array}{r} 5 \\ \times\ 4 \\ \hline \end{array}$

2 $4\overline{)32}$

3 $\begin{array}{r} 8 \\ \times\ 3 \\ \hline \end{array}$

4 $7\overline{)14}$

5 $3\overline{)30}$

6 $7\overline{)42}$

7 $6\overline{)30}$

8 $\begin{array}{r} 6 \\ \times\ 7 \\ \hline \end{array}$

9 $\begin{array}{r} 6 \\ \times\ 4 \\ \hline \end{array}$

10 $4\overline{)40}$

11 $\begin{array}{r} 7 \\ \times\ 1 \\ \hline \end{array}$

12 $\begin{array}{r} 5 \\ \times\ 8 \\ \hline \end{array}$

13 $9\overline{)81}$

14 $\begin{array}{r} 10 \\ \times\ 12 \\ \hline \end{array}$

15 $9\overline{)63}$

16 $\begin{array}{r} 4 \\ \times\ 9 \\ \hline \end{array}$

17 $\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$

18 $\begin{array}{r} 11 \\ \times\ 3 \\ \hline \end{array}$

19 $11\overline{)22}$

20 $10\overline{)70}$

Name: ______________________

Mixed Facts Timed Practice Sheet 8

Number Correct: ______

1 $\begin{array}{r} 10 \\ \times\ 4 \\ \hline \end{array}$

2 $3\overline{)24}$

3 $5\overline{)45}$

4 $\begin{array}{r} 9 \\ \times\ 3 \\ \hline \end{array}$

5 $\begin{array}{r} 6 \\ \times\ 11 \\ \hline \end{array}$

6 $\begin{array}{r} 6 \\ \times\ 5 \\ \hline \end{array}$

7 $10\overline{)40}$

8 $1\overline{)5}$

9 $8\overline{)24}$

10 $3\overline{)36}$

11 $\begin{array}{r} 11 \\ \times\ 9 \\ \hline \end{array}$

12 $6\overline{)18}$

13 $12\overline{)72}$

14 $\begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array}$

15 $9\overline{)54}$

16 $\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$

17 $7\overline{)14}$

18 $\begin{array}{r} 6 \\ \times\ 7 \\ \hline \end{array}$

19 $\begin{array}{r} 7 \\ \times\ 12 \\ \hline \end{array}$

20 $\begin{array}{r} 5 \\ \times\ 5 \\ \hline \end{array}$

Name: ____________________

Mixed Facts Timed Practice Sheet 9

Number Correct: ______

1 $\begin{array}{r} 4 \\ \times\ 4 \\ \hline \end{array}$	**2** $9\overline{)18}$	**3** $\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$	**4** $3\overline{)12}$
5 $9\overline{)27}$	**6** $\begin{array}{r} 11 \\ \times\ 11 \\ \hline \end{array}$	**7** $5\overline{)60}$	**8** $6\overline{)12}$
9 $6\overline{)60}$	**10** $\begin{array}{r} 5 \\ \times\ 6 \\ \hline \end{array}$	**11** $\begin{array}{r} 12 \\ \times\ 8 \\ \hline \end{array}$	**12** $\begin{array}{r} 8 \\ \times\ 1 \\ \hline \end{array}$
13 $7\overline{)49}$	**14** $\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$	**15** $\begin{array}{r} 11 \\ \times\ 10 \\ \hline \end{array}$	**16** $7\overline{)77}$
17 $\begin{array}{r} 7 \\ \times\ 10 \\ \hline \end{array}$	**18** $11\overline{)121}$	**19** $8\overline{)16}$	**20** $\begin{array}{r} 4 \\ \times\ 12 \\ \hline \end{array}$

Name: ______________________________

Mixed Facts Timed Practice Sheet 10

Number Correct: ______

1 $\begin{array}{r} 3 \\ \times\ 6 \\ \hline \end{array}$	**2** $\begin{array}{r} 10 \\ \times\ \ 7 \\ \hline \end{array}$	**3** $2\overline{)18}$	**4** $11\overline{)88}$
5 $\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array}$	**6** $4\overline{)48}$	**7** $\begin{array}{r} 9 \\ \times\ 10 \\ \hline \end{array}$	**8** $8\overline{)72}$
9 $\begin{array}{r} 4 \\ \times\ 3 \\ \hline \end{array}$	**10** $7\overline{)63}$	**11** $\begin{array}{r} 3 \\ \times\ 7 \\ \hline \end{array}$	**12** $\begin{array}{r} 11 \\ \times\ \ 6 \\ \hline \end{array}$
13 $3\overline{)\ 9}$	**14** $12\overline{)96}$	**15** $1\overline{)10}$	**16** $5\overline{)15}$
17 $10\overline{)90}$	**18** $\begin{array}{r} 9 \\ \times\ 12 \\ \hline \end{array}$	**19** $\begin{array}{r} 2 \\ \times\ 5 \\ \hline \end{array}$	**20** $\begin{array}{r} 11 \\ \times\ 12 \\ \hline \end{array}$

Name ____________

Fact Practice Graph