Let's Do Some Math Notice and Wonder	$3 \times ? = 12$ $\quad\quad$ $12 \div 3 = ?$

Standards Unpacking		
Key	**Standard**	**Prerequisites/Vocabulary**
Put a box around the conceptual component of the standard. Underline the procedural/fluency component of the standard. Put a cloud around the application component of the standard.	**3.OA.2** - Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.OA.3 - Use ~~multiplication and~~ division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.OA.4 - Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.OA.6 - Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?

Standards Unpacking		
Key	**Standard**	**Prerequisites/Vocabulary**
Put a box around the conceptual component of the standard. Underline the procedural/fluency component of the standard. Put a cloud around the application component of the standard.	**3.OA.7 –** With accuracy and efficiency, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.1 - Understand a fraction 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.2- Understand a fraction as a number on the number line; represent fractions on a number line diagram.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.2a - Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.2b - Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?

Standards Unpacking		
Key	**Standard**	**Prerequisites/Vocabulary**
Put a box around the conceptual component of the standard. Underline the procedural/fluency component of the standard. Put a cloud around the application component of the standard.	**3.NF.3-** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their sizes.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.3a - Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.3b - Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.3c - Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.NF.3d - Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.G.2 - Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?

A softball field has 8 benches on which the players can sit. Each bench can seat 9 players. What is the greatest number of players who can sit on all of the benches at one time?

- A. 17
- B. 72
- C. 80
- D. 81

A flower garden is divided into equal parts. The color of the flowers planted in each part of the garden is shown.

Red	Yellow	Yellow	Purple
Yellow	Red	Pink	Red

Select the **three** statements that are true.

- ☐ A. There are red or yellow flowers in $\frac{1}{6}$ of the garden.
- ☐ B. Purple flowers are planted in $\frac{7}{8}$ of the garden.
- ☐ C. Pink flowers are planted in $\frac{1}{8}$ of the garden.
- ☐ D. Each part of the garden is $\frac{1}{8}$ of the whole garden.
- ☐ E. There are yellow flowers in $\frac{3}{6}$ of the garden.
- ☐ F. Red flowers are planted in $\frac{3}{8}$ of the garden.

Damian wrote a sentence using the fractions $\frac{2}{3}$ and $\frac{2}{6}$.

"The numerators of $\frac{2}{3}$ and $\frac{2}{6}$ are equal, so the fractions are equal."

Damian is incorrect in his reasoning.

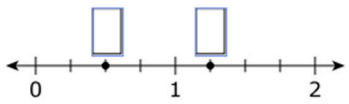
- Explain why Damian is incorrect in his reasoning about numerators.
- Write a correct comparison for $\frac{2}{3}$ and $\frac{2}{6}$ using < or >.
- Explain why your reasoning is correct.

Enter your answer and your explanations in the space provided.

Which fractions represent the points shown on the number line?

Drag and drop the fractions into the boxes.

$\frac{5}{4}$ $\frac{5}{8}$ $\frac{3}{4}$ $\frac{2}{8}$ $\frac{2}{4}$ $\frac{6}{4}$



Correctly complete the equation.

Enter your answer in the box.

$\square \div 5 = 8$

Mr. Haley bought a total of 36 pictures. The pictures are only sold in packages. Each package came with 4 small pictures, 3 medium pictures, and 2 large pictures.

How many pictures were in each package? Show your work.

How many packages did he buy? Show your work.

Sasha bought an apple and cut it into equal-sized pieces. After she ate a piece, there were 3 pieces remaining. What fraction of the apple did Sasha eat?

- A. $\frac{1}{4}$
- B. $\frac{1}{3}$
- C. $\frac{2}{3}$
- D. $\frac{3}{4}$

Fred has 36 stuffed animals that he will give to 9 different friends. He will give an equal number of stuffed animals to each friend. Fred uses the equation $36 \div 9 = ?$ to find how many stuffed animals he will give to each friend.

He thinks the ? equals 3. Explain why he is wrong.

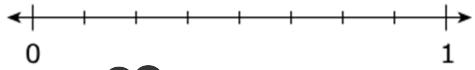
The number sentences are related facts.

$5 \times 3 = ?$

$? \div 3 = 5$

What is the missing number?

Select a point on the number line to plot a point that is equivalent to $\frac{3}{4}$.

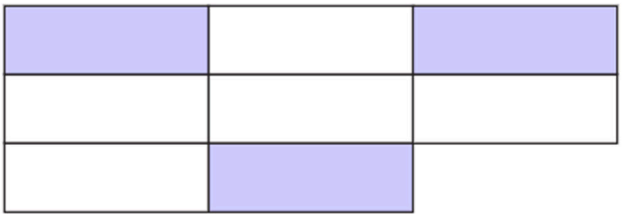


Which fractions are equivalent to a whole number?

Select the **two** correct answers.

- ☐ A. $\frac{4}{4}$
- ☐ B. $\frac{5}{4}$
- ☐ C. $\frac{3}{2}$
- ☐ D. $\frac{1}{2}$
- ☐ E. $\frac{3}{1}$

The figure is divided into parts with equal areas as shown.



What fraction of the figure is shaded?

$$\frac{2}{6} < \square$$

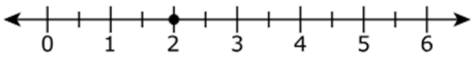
Select the **three** fractions that make this comparison true.

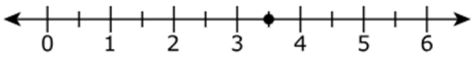
- ☐ A. $\frac{3}{6}$
- ☐ B. $\frac{2}{8}$
- ☐ C. $\frac{2}{4}$
- ☐ D. $\frac{2}{3}$
- ☐ E. $\frac{1}{6}$

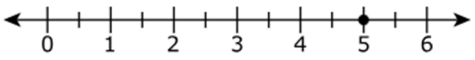
Which number of stickers could be found using $24 \div 4$?

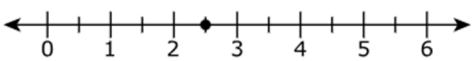
- ○ A. The number of stickers left when 4 of the 24 stickers are given away.
- ○ B. The total number of stickers in a book with 24 pages when 4 stickers are placed on each page.
- ○ C. The total number of stickers on a page with 24 stickers and 4 more stickers are added to the page.
- ○ D. The number of stickers in each row when a total of 24 stickers are equally placed into 4 rows on a page.

Which number line has a point plotted to represent $\frac{5}{2}$?

- ○ A. 

- ○ B. 

- ○ C. 

- ○ D. 

Which **three** comparisons are true?

- ☐ A. $\frac{1}{3} = \frac{3}{6}$
- ☐ B. $\frac{3}{4} = \frac{6}{8}$
- ☐ C. $\frac{4}{8} = \frac{1}{2}$
- ☐ D. $\frac{1}{4} = \frac{4}{8}$
- ☐ E. $\frac{4}{6} = \frac{2}{3}$

Ways to Divide

12 ÷ 4

Examples

Strategies

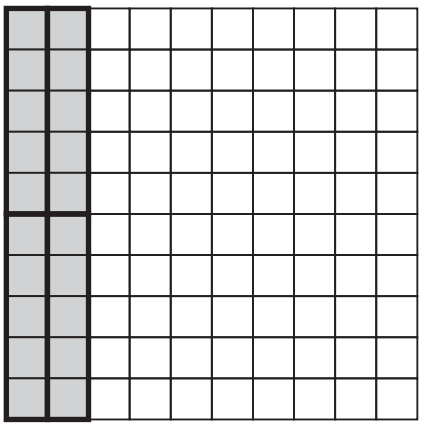
Notes:	

Division Vocabulary

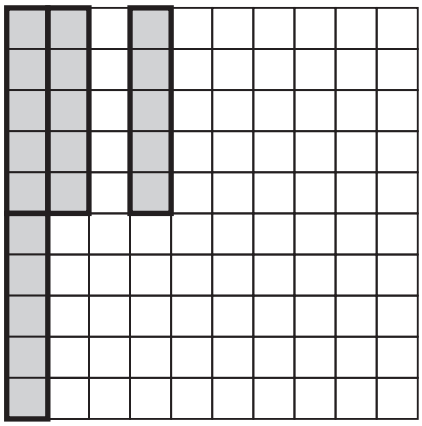
	Definition	Example 1	Example 2
Dividend			
Divisor			
Quotient			

Directions: Complete this page with your teacher and partner.

1. A.



B.



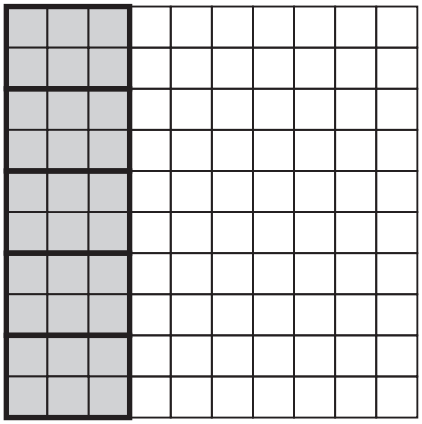
Number Sentences:

20 ÷ ___ = 4

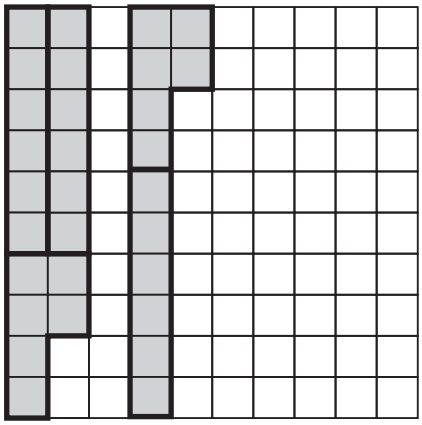
(15 ÷ __) + (5 ÷ __) = 4

20 ÷ 5 = (15 ÷ __) + (5 ÷ ___)

2. A.



B.



Are both sets of arrays equal? _____

How do you know? _____

Number Sentences:

30 ÷ ___ = 5

(18 ÷ ___) + (12 ÷ ___) = 5

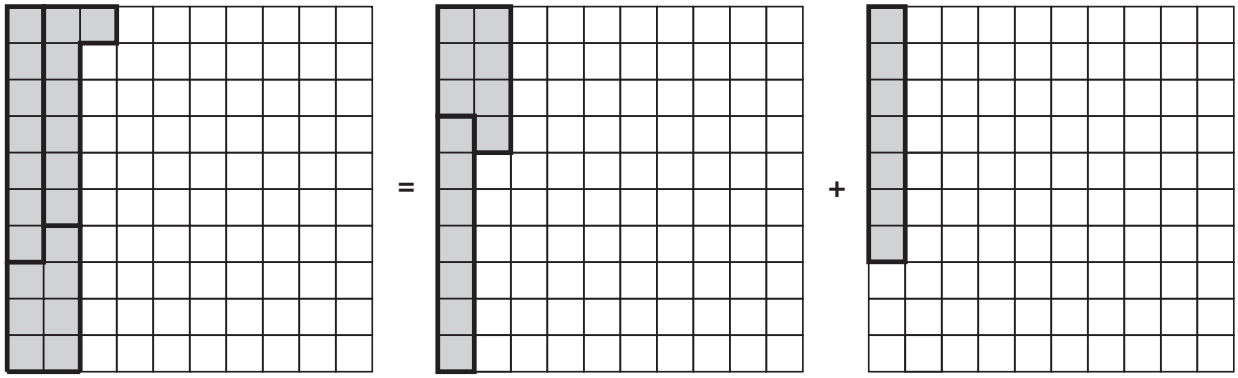
30 ÷ ___ = (18 ÷ ___) + (12 ÷ 6)

What happened to the 18 and 12 in 18 ÷ 6 and 12 ÷ 6? _____

_____.

Directions: Complete this page with your teacher and partner.

1.

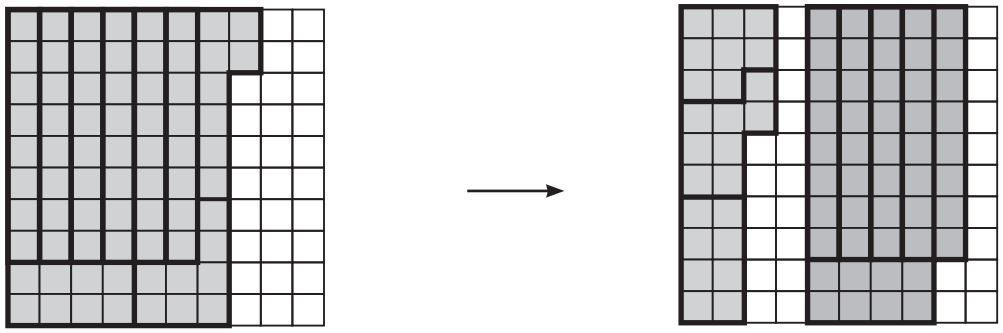


_____ ÷ _____ = _____ ÷ _____ + _____ ÷ _____

Way to Divide

What can you conclude about these facts? 21 ÷ ___ = (14 ÷ ___) + (7 ÷ ___)
If you know that 21 ÷ 7 = ___, then you can also conclude that 21 ÷ ___ = 7.

2.



_____ ÷ _____ = (___ ÷ ___) + (___÷ ___)

Way to Divide

What can you conclude about these facts? 72 ÷ ___ = (24 ÷ ___) + (48 ÷ ___)
If you know that 72 ÷ 8 = ___, then you can also conclude that 72 ÷ ___ = 8.

Directions: Complete this page with your teacher and partner.

Steps for Dividing

- _____ the problem.
- Separate the dividend into _____ dividends.
- The _____ remains the same.
- Solve the _____ division problems.
- _____ the quotients together.

Let's Review	
Solve by separating, or dividing, the dividend. **1.** 28 ÷ 4 = 16 ÷ 4 and ___ ÷ 4	Solve by separating, or dividing, the dividend. **2.** 63 ÷ 7 = 28 ÷ 7 and ___ ÷ 7
What can you conclude? 28 ÷ ___ = (16 ÷ ___) + (12 ÷ ___) 28 ÷ _____ = 7 and 28 ÷ _____ = 4	What can you conclude? 63 ÷ ___ = (28 ÷ ___) + (35 ÷ ___) 63 ÷ ___ = 9 and 63 ÷ ___ = 7
3. If 54 ÷ 6 = 9, then what other division problem do you know?	**4.** If 45 ÷ 9 = 5, then what other division problem do you know?
5. If (12 ÷ 3) + (15 ÷ 3) = 9, then what division problem can be created?	**6.** If (16 ÷ 4) + (20 ÷ 4) = 9, then what division problem can be created?

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Elise is helping her grandmother plant a garden. They plant $\frac{1}{2}$ of the garden with tomato plants and $\frac{1}{3}$ of the garden with lettuce. Which vegetable takes up more space in the garden?

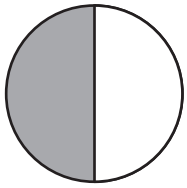
S Underline the question.
This problem is asking me to find _____

_____.

Directions: Complete this page with your teacher and partner.

_____ $\frac{1}{2}$ _____

What does the fraction $\frac{1}{2}$ mean? _____



The circle is divided into_____ equal parts.
How many parts are shaded? _____
The denominator tells _____
The numerator tells _____

Legal Trades for Kit 1

I GAVE Picture Fraction	PARTNER GAVE ME BACK Picture Fraction
=	

Legal Trades for Kit 1

I GAVE Picture Fraction	PARTNER GAVE ME BACK Picture Fraction
=	

I GAVE Picture Fraction	PARTNER GAVE ME BACK Picture Fraction
=	

I GAVE Picture Fraction	PARTNER GAVE ME BACK Picture Fraction
=	

Legal Trades for Kits 1 and 2

I GAVE Picture Fraction	PARTNER GAVE ME BACK Picture Fraction
=	

I GAVE Picture Fraction	PARTNER GAVE ME BACK Picture Fraction
=	

I GAVE Picture Fraction	PARTNER GAVE ME BACK Picture Fraction
=	

Equivalent Fractions

Which of the following are equivalent? Draw fraction strips to help you solve.

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

Draw equivalent fractions for each of the following.

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

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Jeff is plotting the progress of the participants in a 1-mile fun run on a number line. Alexis is $\frac{1}{3}$ of a mile from the starting line. Her friend, Julie, is $\frac{1}{2}$ of a mile from the starting line. How will Jeff represent Alexis' location on a number line?

S Underline the question.
This problem is asking me to find _____

_____.

Directions: Complete this page with your teacher and partner.

Fraction	Fraction Strips	Number of Parts in the Whole Unit
$\frac{1}{2}$	1 Unit	
$\frac{1}{4}$	1 Unit	
$\frac{1}{3}$	1 Unit	
$\frac{1}{6}$	1 Unit	

Directions: Complete this page with your teacher and partner.

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

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

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

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

Directions: Complete this page with your teacher and partner.

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

2. $\frac{2}{4}$

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

4. $\frac{2}{2}$

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

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Mary and Jonathon both bought a new box of erasers at the beginning of school. Mary has used $\frac{1}{2}$ of her erasers, and Jonathon has used $\frac{1}{5}$ of his erasers. Who has used more erasers?

S Underline the question.
This problem is asking me to find _____

_____.

Directions: Complete this page with your teacher and partner.

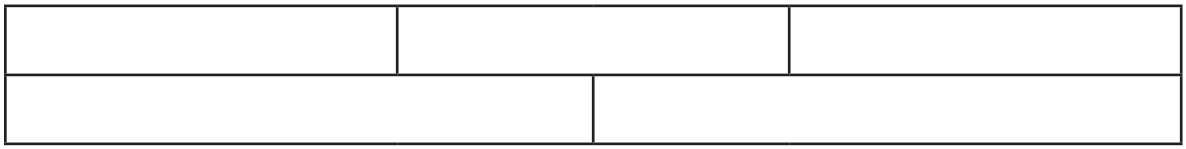
1. $\frac{2}{3}$ and $\frac{4}{6}$ Equivalent? _____

2. $\frac{4}{4}$ and $\frac{3}{3}$ Equivalent? _____

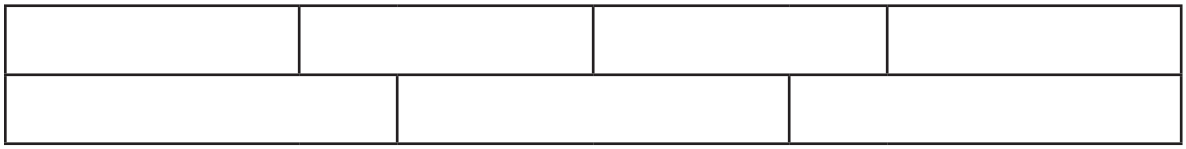
3. $\frac{1}{2}$ and $\frac{4}{6}$ Equivalent? _____

Directions: Complete this page with your partner.

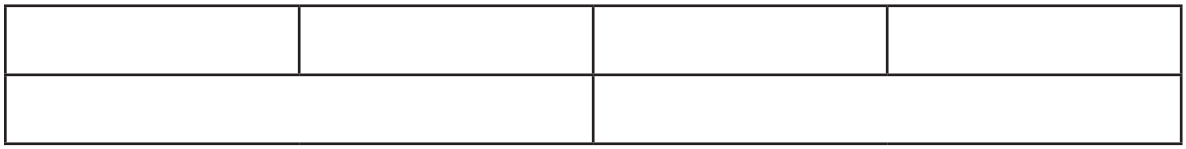
4. $\frac{3}{3}$ and $\frac{1}{2}$ Equivalent? _____



5. $\frac{3}{4}$ and $\frac{2}{3}$ Equivalent? _____



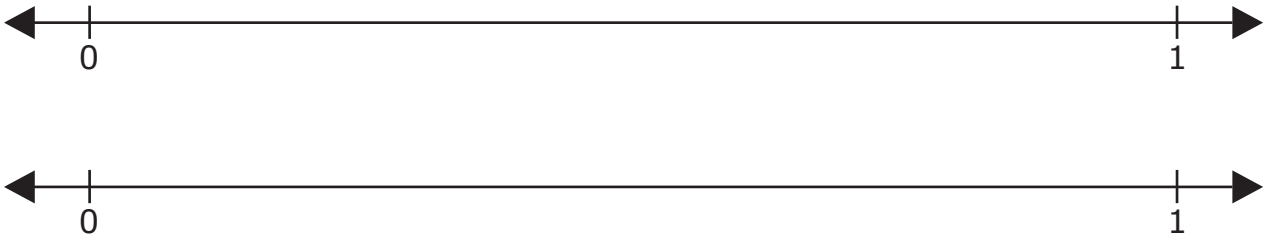
6. $\frac{2}{4}$ and $\frac{1}{2}$ Equivalent? _____



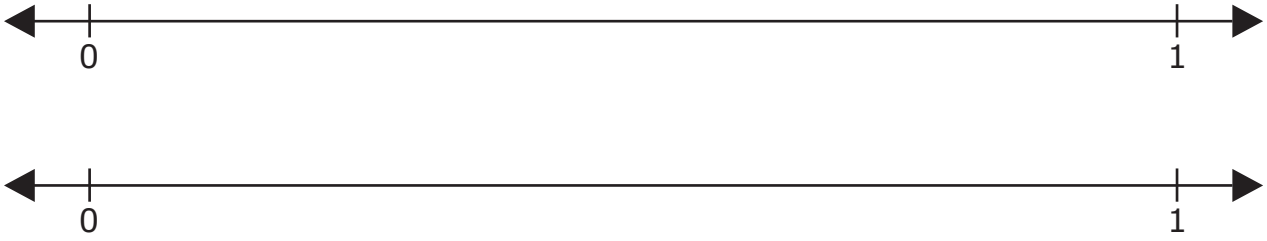
Equivalent fractions are fractions that are the same _____. We can prove this by lining up the fraction strips, and if the fraction strips are the same _____ then the two fractions are equivalent.

Directions: Complete this page with your teacher and partner.

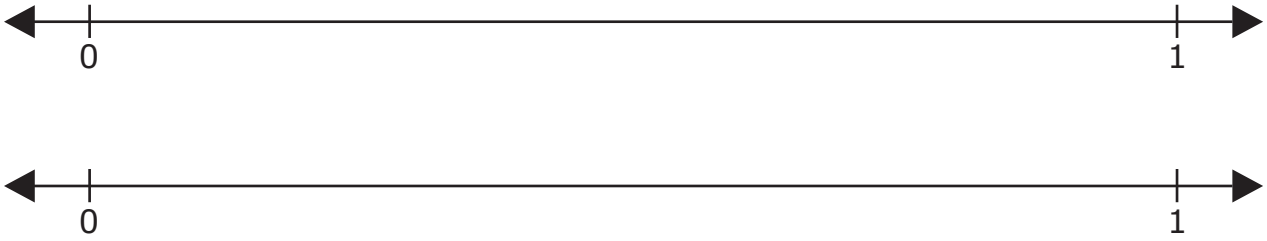
1. $\frac{3}{4}$ and $\frac{6}{8}$ Equivalent? _____



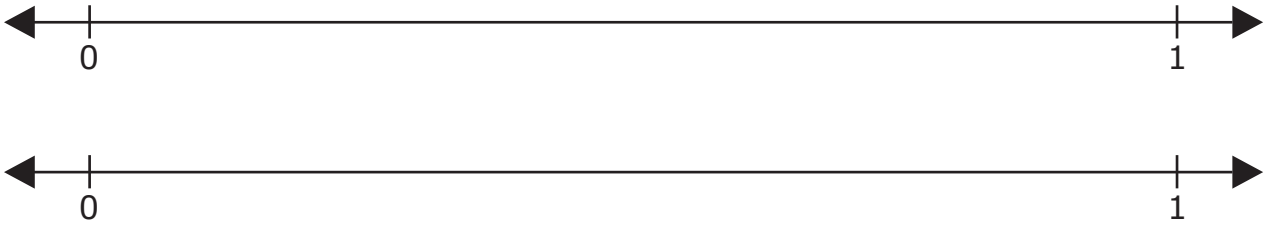
2. $\frac{2}{2}$ and $\frac{5}{6}$ Equivalent? _____



3. $\frac{2}{4}$ and $\frac{3}{6}$ Equivalent? _____



4. $\frac{2}{3}$ and $\frac{5}{8}$ Equivalent? _____



Understanding Reasoning Questions Use this sheet as a reflection tool to support the understanding of the evidence statement around the reasoning questions. After you engage/learn about the questions, use the tool to make notes around your take aways and implementation ideas.	
Current Unit Topics:	
	Evidence Statement for Reasoning
What Content Standards Are Addressed in This Evidence Statement from the Current Unit?	
Takeaways About the Statement – What Do Students Need to Be Able to Do	
What Should Be Evident in a Student Response	

What Type of Reasoning	
Explain	**Identify the Error**

Reasoning Question – 3.C.4-4

Used from: NJ Released Questions – 3.C.4-4– Fractions- – M01201

Damian wrote a sentence using the fractions $\frac{2}{3}$ and $\frac{2}{6}$.

"The numerators of $\frac{2}{3}$ and $\frac{2}{6}$ are equal, so the fractions are equal." Damian is incorrect in his reasoning.

- Explain why Damian is incorrect in his reasoning about numerators.
- Write a correct comparison for $\frac{2}{3}$ and $\frac{2}{6}$ using < or >.
- Explain why your reasoning is correct.