CITYTUTOR DC

Third Grade Math Lesson Materials

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CITYTUTOR DC

G3 Unit 4:

Exploring Fractions as Numbers

G3 U4 Lesson 1

Partition a whole into equal parts and name unit fractions with words using concrete models

CITYTUTOR DC

G3 U4 Lesson 1 - Partition a whole into equal parts and name unit fractions with words using concrete models

Warm Welcome (Slide 1): Tutor choice.

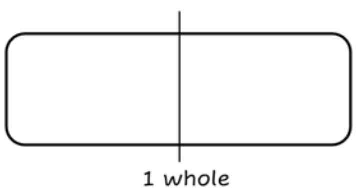
Frame the Learning/Connect to Prior Learning (Slide 2): Today we will explore partitioning, or *dividing*, a whole into **equal parts**. We do this at birthday parties, sleepovers, holiday family gatherings, and so many more places. We do it whenever we want to share something equally with other people! When we partition one whole into **equal** pieces, we create a **fraction** of the whole. Let me show you what I mean.

Let's Talk (Slide 3): Here we have a Snickers bar. **If I wanted to share this Snickers bar among me and my three friends, could I?** I only have 1 bar, though! Possible Student Answers, Key Points:

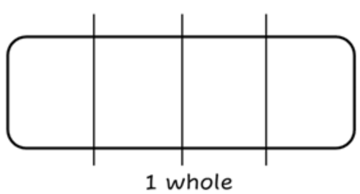
- Yes, you can break it up! You would each get a piece because you only have one Snickers bar!
- Yes, you can cut it into smaller pieces. It wouldn't be a whole bar anymore because you cut it to share.

Let's Think (Slide 4): So, we know that we can share it, now we need to make sure that they're **equal** pieces. We don't want to be unfair when we share–we want to make sure all of the pieces are the exact same side! I'm going to make a drawing of my Snickers bar to make sure I *divide* it into equal pieces, I'll just draw a bar model, not an actual picture of a snickers.

I'm going to start with my one Snickers bar. I'm going to label it, so it's easy to identify what it is - and to remind myself that I'm starting with **one whole**.

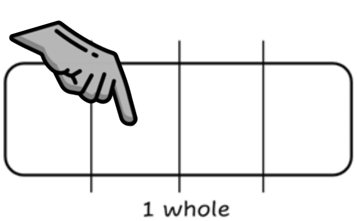


I want to share the **whole** with four people - me and my three friends (*count total on fingers*). That's four pieces total. So, I need to cut it into **equal** pieces. I'm going to start by cutting it in **half, that's 1, 2 equal pieces**.



Now, I can divide each **half** into two pieces. This helps me to make sure my pieces are the same size. Now, I have (*point to each piece and count*) 1, 2, 3, 4 pieces of Snickers! Do they look equal? Am I being fair to everyone?

Now that I've split my bar into four **equal** pieces, I can give everyone **one** piece. Remember at the beginning of the lesson I introduced the word **fraction**? Well, here's where we use it. There's a name for the **size** of each of these pieces that I've cut - the name is determined by how many pieces there are in one whole.



When I cut something into fourth equal sized pieces, I cut the whole into fourths. So, each of these pieces are **one-fourth** of the Snickers bar. (*Point to each of the pieces as you name it "one-fourth" to emphasize each piece)* It's called **one-fourth** because it's **<u>one</u> of <u>four</u> pieces** that I cut. The size of the piece is **one-fourth** of the Snickers bar. We have **one** piece out of the **four pieces** we made. When we use fractions to describe something, we're letting people know the **size of the piece** we're describing. Let's try this together.

Let's Think (Slide 5): There are special names for different **size** pieces. Let me show you what I mean. How many Snicker pieces are there in this picture? Two! When a whole is split into two equal sized pieces, the size of the piece is called **halves**. *(Write the word under the Snickers. Then, have students repeat "halves" after* *you.)* So, what would we call just **one** piece out of the two we made? One-half. And let's count how many halves are in 1 whole…1 half, 2 halves (*point and count*). So, 2 halves are in 1 whole.

Let's Think (Slide 6): Look at this candy bar, it's split into more many pieces! How many equal-sized pieces are there in this picture? Four! When we have four pieces of a whole, the size of the piece is called **fourths**. *(Write the word out under the four pieces of Snickers.* So, what would the size be for just **one** piece out of the four we made? One-fourth. And let's count how many fourths are in 1 whole…1 fourth, 2 fourths, 3 fourths, 4 fourths (*point and count*). So, 4 fourths are in 1 whole.

Let's Think (Slide 7): Wow, look how many pieces there are here! The pieces are getting smaller and smaller. Let's count how many equal-sized pieces this Snickers is partitioned into? Count carefully! Eight! When we have **eight** pieces of a whole, the size of the piece is called **eighths**. *(Write the word out under the eight pieces. Then, have students repeat "eighths".)* So, what would the size be for just **one** piece out of the eight we made? One-eighth. And, let's count how many eighths are in 1 whole…1 eighths, 2 eights, etc. So, 8 eighths are in 1 whole.

What did you notice as the pieces went from halves to eighths? What happened to the size? Possible Student Answers, Key Points:

- The pieces got smaller the more pieces of Snickers bars we made.
- The numbers got bigger, but the size of the pieces got smaller!

Note: This last part is not imperative for students to get on their own. This will come later in the unit. If students don't pick up on the pattern, just tell them and move on. "The pieces actually get smaller the more pieces we cut! Halves are bigger than eighths because to make eighths we cut the bar more times so the pieces got smaller."

Let's Think (Slide 8): Before we move on to our practice, let's take a look at this Snickers bar. **This isn't a fraction. Can you tell why?** Possible Student Answers, Key Points:

- They're not in equal pieces - fractions have to be equal sizes!
- Fractions are a whole cut into equal size pieces and these are all different sizes.

Let's Try it (Slides 9-10): So, today, as we practice, let's make sure we're making our pieces into **equal** sizes and then using the right fraction name for the size of the pieces we cut! Remember, the fraction name comes from how many equal sized pieces there are in 1 whole. Lastly, don't forget to use our cutting strategy - cut the whole in half and then cut it in half again until you have the right amount of equal pieces! Let's try it together!

WARM WELCOME

Today we will explore partitioning a whole into equal parts and naming unit fractions with words using concrete models.

Let's Talk:

Is it possible to share ONE bar of candy with *four* different people?

Let's Think:

How would we take ONE bar of candy and share it EQUALLY with four people?

How much of the candy bar would each person get?

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Let's Think:

Each **size** that's cut has a **special name**!

Let's Think:

Each **size** that's cut has a **special name**!

Let's Think:

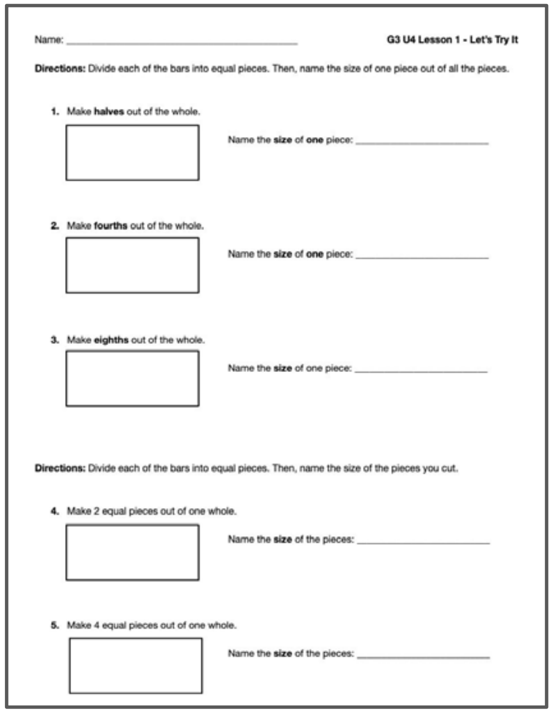
Each **size** you cut has a **different name**!

Let's Think:

This ISN'T a fraction!

Can you tell why?

Let's Try It:



Name: ______________________ **G3 U4 Lesson 1 - Let's Try It**

Directions: Divide each of the bars into equal pieces. Then, name the size of one piece out of all the pieces.

1. Make **halves** out of the whole. Name the **size** of **one** piece: ______________

2. Make **fourths** out of the whole. Name the **size** of **one** piece: ______________

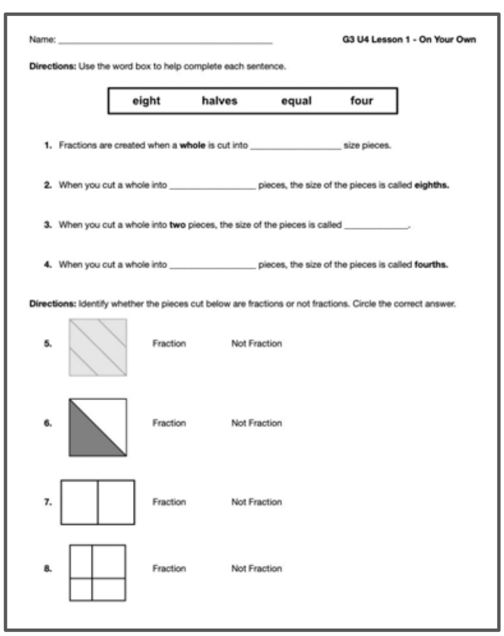
3. Make **eighths** out of the whole. Name the **size** of one piece: ______________

Directions: Divide each of the bars into equal pieces. Then, name the size of the pieces you cut.

4. Make 2 equal pieces out of one whole. Name the **size** of the pieces: ______________

5. Make 4 equal pieces out of one whole. Name the **size** of the pieces: ______________

On your Own:



Name: ______________________ **G3 U4 Lesson 1 - On Your Own**

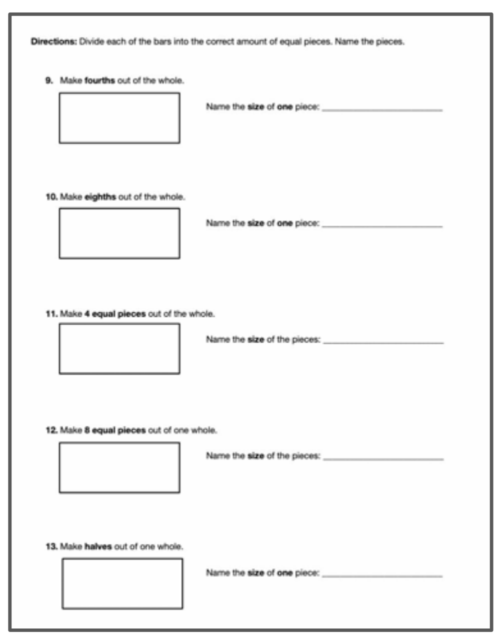
Directions: Use the word box to help complete each sentence.

eight	**halves**	**equal**	**four**

1. Fractions are created when a **whole** is cut into ____________ size pieces.
2. When you cut a whole into ____________ pieces, the size of the pieces is called **eighths.**
3. When you cut a whole into **two** pieces, the size of the pieces is called ____________.
4. When you cut a whole into ____________ pieces, the size of the pieces is called **fourths.**

Directions: Identify whether the pieces cut below are fractions or not fractions. Circle the correct answer.

5. Fraction Not Fraction
6. Fraction Not Fraction
7. Fraction Not Fraction
8. Fraction Not Fraction



Directions: Divide each of the bars into the correct amount of equal pieces. Name the pieces.

9. Make **fourths** out of the whole. Name the **size** of **one** piece: ______________

10. Make **eighths** out of the whole. Name the **size** of **one** piece: ______________

11. Make **4 equal pieces** out of the whole. Name the **size** of the pieces: ______________

12. Make **8 equal pieces** out of one whole. Name the **size** of the pieces: ______________

13. Make **halves** out of one whole. Name the **size** of **one** piece: ______________

Name: ____

Directions: Divide each of the bars into equal pieces. Then, name the size of one piece out of all the pieces.

1. Make **halves** out of the whole.

Name the **size** of **one** piece: _________________________

2. Make **fourths** out of the whole.

Name the **size** of **one** piece: _________________________

3. Make **eighths** out of the whole.

Name the **size** of one piece: _________________________

Directions: Divide each of the bars into equal pieces. Then, name the size of the pieces you cut.

4. Make 2 equal pieces out of one whole.

Name the **size** of the pieces: _________________________

5. Make 4 equal pieces out of one whole.

Name the **size** of the pieces: _________________________

Name: ____ G3 U4 Lesson 1 - Independent Work

Directions: Use the word box to help complete each sentence.

eight	**halves**	**equal**	**four**

1. Fractions are created when a **whole** is cut into ____________________ size pieces.

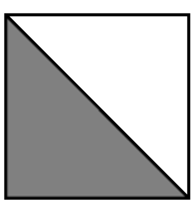
2. When you cut a whole into ___________________ pieces, the size of the pieces is called **eighths.**

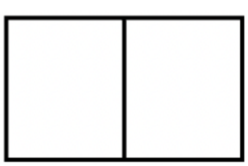
3. When you cut a whole into **two** pieces, the size of the pieces is called ______________.

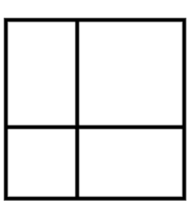
4. When you cut a whole into ___________________ pieces, the size of the pieces is called **fourths.**

Directions: Identify whether the pieces cut below are fractions or not fractions. Circle the correct answer.

5.  Fraction Not Fraction

6.  Fraction Not Fraction

7.  Fraction Not Fraction

8.  Fraction Not Fraction

Directions: Divide each of the bars into the correct amount of equal pieces. Name the pieces.

9. Make **fourths** out of the whole.

Name the **size** of **one** piece: ______________________________

10. Make **eighths** out of the whole.

Name the **size** of **one** piece: ______________________________

11. Make **4 equal pieces** out of the whole.

Name the **size** of the pieces: ______________________________

12. Make **8 equal pieces** out of one whole.

Name the **size** of the pieces: ______________________________

13. Make **halves** out of one whole.

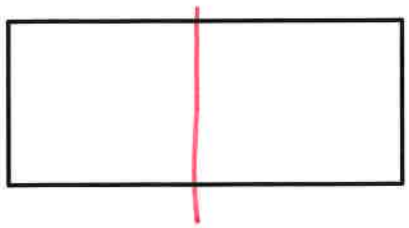
Name the **size** of **one** piece: ______________________________

Name: ANSWER KEY

G3 U4 Lesson 1 - Let's Try It

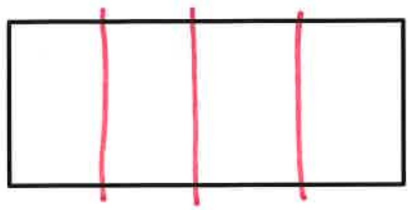
Directions: Divide each of the bars into equal pieces. Then, name the size of one piece out of all the pieces.

1. Make **halves** out of the whole.



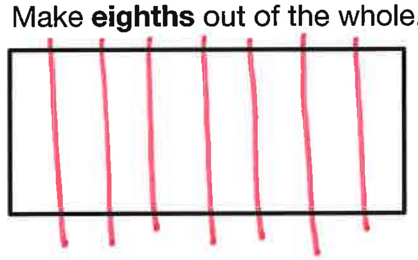
Name the **size** of **one** piece: one-half

2. Make **fourths** out of the whole.



Name the **size** of **one** piece: one-fourth

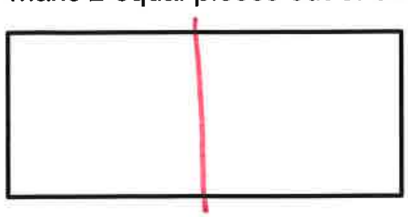
3. Make **eighths** out of the whole.



Name the **size** of one piece: one-eighth

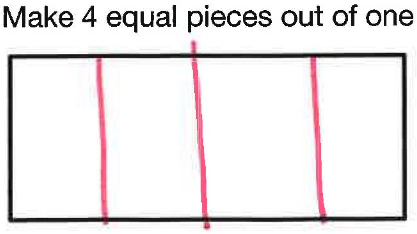
Directions: Divide each of the bars into equal pieces. Then, name the size of the pieces you cut.

4. Make 2 equal pieces out of one whole.



Name the **size** of the pieces: halves

5. Make 4 equal pieces out of one whole.



Name the **size** of the pieces: fourths

Name: ANSWER KEY

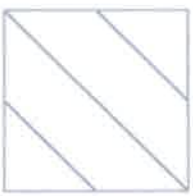
G3 U4 Lesson 1 - Independent Work

Directions: Use the word box to help complete each sentence.

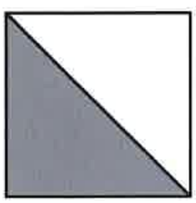
eight	**halves**	**equal**	**four**

1. Fractions are created when a **whole** is cut into equal size pieces.
2. When you cut a whole into eight pieces, the size of the pieces is called **eighths.**
3. When you cut a whole into **two** pieces, the size of the pieces is called halves.
4. When you cut a whole into four pieces, the size of the pieces is called **fourths.**

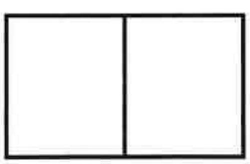
Directions: Identify whether the pieces cut below are fractions or not fractions. Circle the correct answer.

5. 

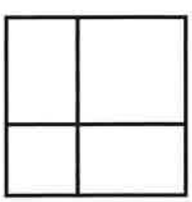
Fraction   Not Fraction

6. 

Fraction   Not Fraction

7. 

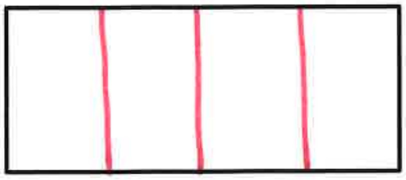
Fraction   Not Fraction

8. 

Fraction   Not Fraction

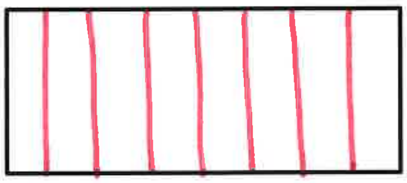
Directions: Divide each of the bars into the correct amount of equal pieces. Name the pieces.

9. Make **fourths** out of the whole.



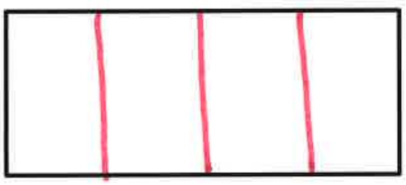
Name the **size** of **one** piece: one-fourth

10. Make **eighths** out of the whole.



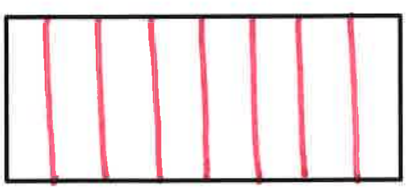
Name the **size** of **one** piece: one-eighth

11. Make **4 equal pieces** out of the whole.



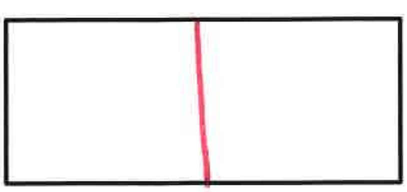
Name the **size** of the pieces: fourths

12. Make **8 equal pieces** out of one whole.



Name the **size** of the pieces: eighths

13. Make **halves** out of one whole.



Name the **size** of **one** piece: one-half

G3 U4 Lesson 2

Partition a whole into equal parts and name unit fractions with fractional notation

G3 U4 Lesson 2 - Partition a whole into equal parts and name unit fractions with fractional notation

Warm Welcome (Slide 1): Tutor choice.

Let's Review (Slide 2): In the last lesson, we wrote fraction names in words and split them into halves, fourths, and eighths. Remember, when we partition one whole into equal pieces, we create a **fraction** of the whole and we name that fraction based on how many pieces there are in 1 whole. Let's get our brains ready with a quick review.

- Look at A - How many pieces are there in 1 whole? Two! When there are two equal sized pieces in one whole, what is each piece called? One half! And finally, how many halves are in 1 whole? Two halves!
- Look at B - How many pieces are there in 1 whole? Four! When there are four equal sized pieces in one whole, what is each piece called? One fourth! And finally, how many fourths are in 1 whole? Four fourths!
- Look at C - How many pieces are there in 1 whole? Eight! When there are eight equal sized pieces in one whole, what is each piece called? One eighth! And finally, how many halves are in 1 whole? Eight eighths!

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will continue partitioning, or dividing, a whole into **equal parts**. Today, we're going to use fractional notation - so writing fractions with **numbers** and split them into different size pieces like thirds and sixths!

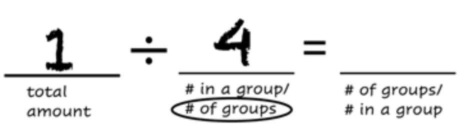
Let's Talk (Slide 4): Before we start, I've been describing this work as **dividing** pieces. **How does creating fraction pieces remind you of division?** Possible Student Answers, Key Points:

- When we make fractions, we cut pieces into equal sizes and in division we create equal sized groups.
- Both division and fractions are creating equal sized groups, like in one-fourth we have one equal group out of 4 pieces.

Note: *If students have a hard time seeing the relationship, circle each of the Snickers pieces on the slide to show 4 groups of 1 - the 1 being the 1 piece of the Snickers bar.*

Let's Think (Slide 5): So, if we know that fractions are just another form of division, let's think about how we can write a division equation for dividing 1 Snickers bar into 4 pieces?

Let's start with what we know about division. A division equation is made up of your total number of items and then you divide that by the number of groups you want to create or the number of items in each group you need to make.



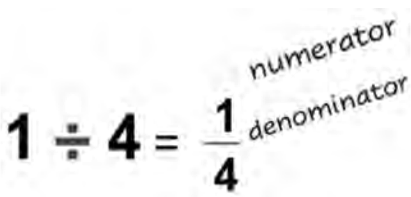
So, if I have 1 whole bar of Snickers and I want to split it with me and my three friends, how many groups of Snickers am I creating? Let's plug our numbers into our division equation. (*Make sure students understand that it is 4 groups because each person is one group, 4 people = 4 groups.)*

Before we solve for our answer, let's think: **will our answer be greater than, equal to, or less than one whole?** Possible Student Answers, Key Points:

- It will be less than one whole because we're sharing one Snickers bar with four people.
- It has to be less because we don't have 4 whole Snickers bars to share with four people. We only have one that we have to cut into 4 pieces.

So, our answer is *less than* one whole, which means that the number we write needs to reflect that.

Yesterday we practiced cutting 1 whole into 4 equal pieces. When we did that, we called each piece one fourth. I want to show you how to write one fourth with numbers, called a fraction. The answer to our division equation we wrote looks like this: $\frac{1}{4}$ (*write fraction*). This is how we write a number when the number is *less than* one whole, called a fraction.



The top digit is called a **numerator** *(label)*. The numerator tells us the number of pieces out of the whole - meaning the number of pieces I'm giving away, what I'm taking *out* of the whole. Just like when we described ONE fourth, this is showing that we have ONE piece.

The bottom digit is called a **denominator** (*label)*. That's the *total number of pieces in the whole*. Just like we called each piece yesterday fourths, this 4 shows us how many pieces are in each whole.

And when we read this fraction, we read it as one fourth (point to numerator and denominator as you read it). Let's practice reading it together…one fourth!

Let's go back to our Snickers. It's split into four equal pieces and if we're sharing it between four people, each person would get $\frac{1}{4}$ of a Snickers bar!

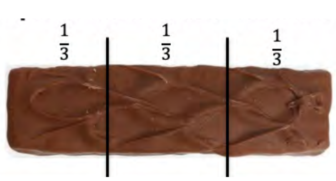
So, let's label each piece with a fraction. This is one fourth (write as fraction), this is one fourth (write as fraction), this is one fourth (write as fraction), and this is one fourth (write as fraction).

Let's Think (Slide 6): We're going to do a similar problem, but this time we're partitioning a whole into **thirds**! Thirds sounds like thrrr…three! Thirds means that there are three pieces in 1 whole. In Lesson 1, we learned a way to split our pieces to make sure they are equally divided. **How did we do that?** Possible Student Answers, Key Points:

- We start by splitting our whole into half, then we take each half and split it again.
- When we make fourths or eighths, we start with halves. Then, we split our halves into half to make fourths. If we want to make eighths, we'll split each fourth into a half.

We use that strategy when we work with *some* even number of pieces. Today, we're going to look at creating **thirds**, which is an odd number of pieces.

Let's look at this Snickers bar. If I wanted to share this between me and two friends, I would break it into three equal pieces. This is a little bit harder, so you'll need to estimate the size and do your best to make sure the sizes are equal. It's okay if it's not perfect - but you need to know that they *should* be equal pieces even if you're not drawing it perfectly.

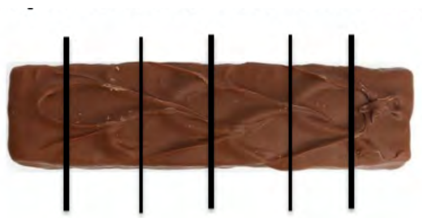


Ok, we've broken the Snickers bar into thirds. So, how many pieces would my friends and I get? We would each get one piece out of the three total pieces, right? So, we would each get $\frac{1}{3}$ of the Snickers bar! This is ⅓, this is ⅓ and this is ⅓ (*Label as you narrate).*

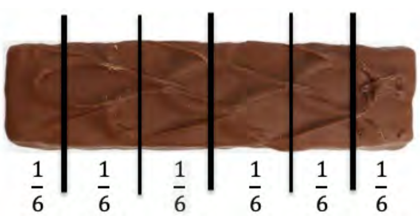
Now, let's review. What is the top digit in our fraction called? Numerator! What does it represent? The number of pieces out of the whole! What's the bottom digit in our fraction called? Denominator! What does it represent? The total number of pieces in the whole!

Let's Think (Slide 7): On this slide, we're making *six* equal pieces. Here is where we can use our strategy from Lesson 1! How are 3 and 6 related? Possible Student Answers, Key Points:

- *2 groups of 3 make 6* ***or*** *3 groups of 2 make 6*
- *2 x 3 = 6* ***or*** *3 x 2 = 6*



Exactly! So, we can start with **thirds**. You do it this time. (*Have students do this either on their whiteboard or on the slide itself)* Now, to make this into **sixths**, we take each **third** and split it in half.



Okay, we've broken the bar into sixths. How many pieces would my 5 friends and I get? We would each get one piece out of the six total pieces, right? Can you label each of the sixths as ⅙ like I did for the fourths and the thirds? This is ⅙, this is ⅙…etc. So, we would each get ⅙ of the Snickers bar!

Now, remind me again. What is the top digit in our fraction called? Numerator! What does it represent? The number of pieces we're using or taking out of the whole! What's the bottom digit in our fraction called? Denominator! What does it represent? The total number of pieces in the whole!

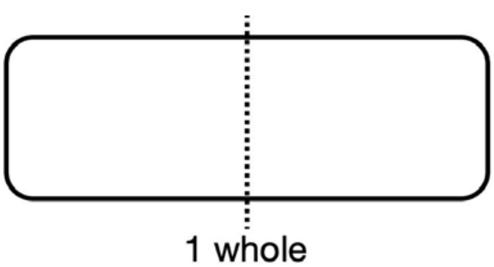
Let's Try it (Slides 8-9): So, today, as we practice, remember that we are writing our fractions in number form. The top digit, the numerator, in our fraction always stands for the number of pieces we're taking out of the whole and the bottom digit, the denominator, is the *total* number of pieces in my whole.

WARM WELCOME

Let's Review:

We name fractions based on how many pieces there are in 1 whole.

A



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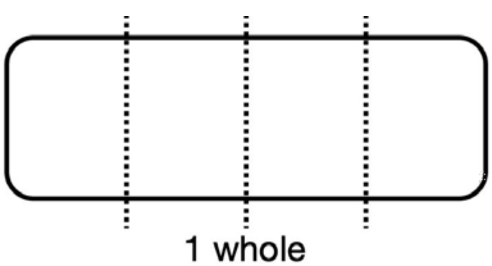
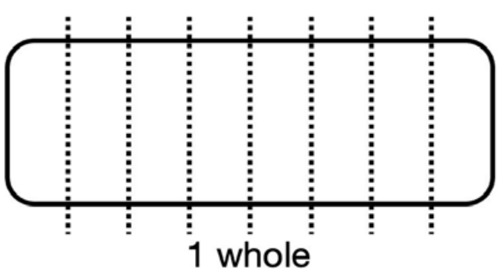


C



Today we will explore partitioning a whole into equal parts and naming unit fractions with fractional notation.

Let's Talk:

How are fractions related to division?

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Let's Think: How would I represent the pieces below as a division equation?

________ ÷ ________ = ________

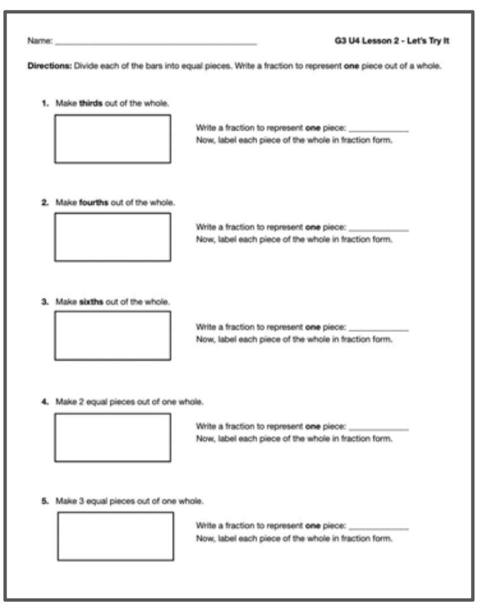
total amount	÷	# in a group/ # of groups	=	# of groups/ # in a group

Let's Think: **Split this bar into THIRDS.**

Let's Think:

Split this bar into SIXTHS.

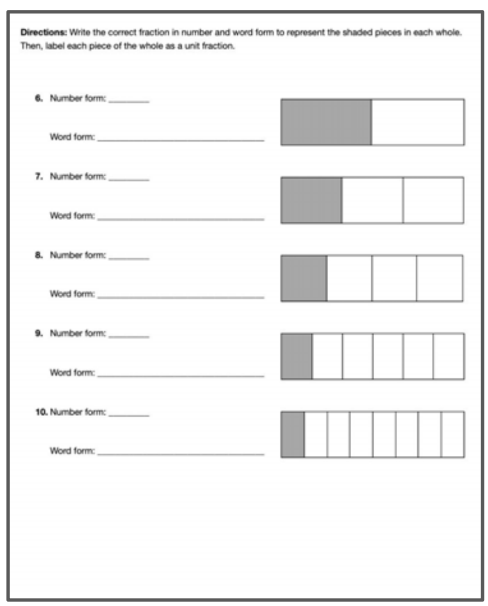
Let's Try It:



Name: ______________________ **G3 U4 Lesson 2 - Let's Try It**

Directions: Divide each of the bars into equal pieces. Write a fraction to represent **one** piece out of a whole.

1. Make **thirds** out of the whole.
   Write a fraction to represent **one** piece: ________
   Now, label each piece of the whole in fraction form.
2. Make **fourths** out of the whole.
   Write a fraction to represent **one** piece: ________
   Now, label each piece of the whole in fraction form.
3. Make **sixths** out of the whole.
   Write a fraction to represent **one** piece: ________
   Now, label each piece of the whole in fraction form.
4. Make 2 equal pieces out of one whole.
   Write a fraction to represent **one** piece: ________
   Now, label each piece of the whole in fraction form.
5. Make 3 equal pieces out of one whole.
   Write a fraction to represent **one** piece: ________
   Now, label each piece of the whole in fraction form.



Directions: Write the correct fraction in number and word form to represent the shaded pieces in each whole. Then, label each piece of the whole as a unit fraction.

6. Number form: ______
   Word form: ____________________
7. Number form: ______
   Word form: ____________________
8. Number form: ______
   Word form: ____________________
9. Number form: ______
   Word form: ____________________
10. Number form: ______
    Word form: ____________________

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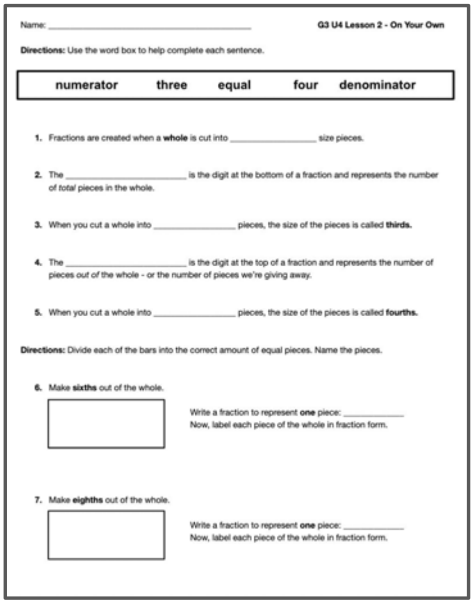
On your Own:



Name: ______________________________ **G3 U4 Lesson 2 - On Your Own**

Directions: Use the word box to help complete each sentence.

numerator	**three**	**equal**	**four**	**denominator**

1. Fractions are created when a **whole** is cut into ______________ size pieces.
2. The ____________________ is the digit at the bottom of a fraction and represents the number of *total* pieces in the whole.
3. When you cut a whole into ______________ pieces, the size of the pieces is called **thirds.**
4. The ____________________ is the digit at the top of a fraction and represents the number of pieces *out of* the whole - or the number of pieces we're giving away.
5. When you cut a whole into ______________ pieces, the size of the pieces is called **fourths.**

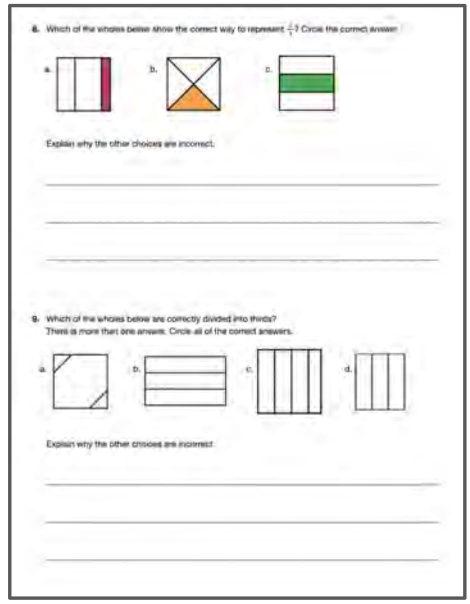
Directions: Divide each of the bars into the correct amount of equal pieces. Name the pieces.

6. Make **sixths** out of the whole.

   Write a fraction to represent **one** piece: __________
   Now, label each piece of the whole in fraction form.

7. Make **eighths** out of the whole.

   Write a fraction to represent **one** piece: __________
   Now, label each piece of the whole in fraction form.



8. Which of the wholes below show the correct way to represent [illegible]? Circle the correct answer.

   a. b. c.

   Explain why the other choices are incorrect.

9. Which of the wholes below are correctly divided into thirds?
   There is more than one answer. Circle all of the correct answers.

   a. b. c. d.

   Explain why the other choices are incorrect.

Directions: Divide each of the bars into equal pieces. Write a fraction to represent **one** piece out of a whole.

1. Make **thirds** out of the whole.

Write a fraction to represent **one** piece: ______________
Now, label each piece of the whole in fraction form.

2. Make **fourths** out of the whole.

Write a fraction to represent **one** piece: ______________
Now, label each piece of the whole in fraction form.

3. Make **sixths** out of the whole.

Write a fraction to represent **one** piece: ______________
Now, label each piece of the whole in fraction form.

4. Make 2 equal pieces out of one whole.

Write a fraction to represent **one** piece: ______________
Now, label each piece of the whole in fraction form.

5. Make 3 equal pieces out of one whole.

Write a fraction to represent **one** piece: ______________
Now, label each piece of the whole in fraction form.

Directions: Write the correct fraction in number and word form to represent the shaded pieces in each whole. Then, label each piece of the whole as a unit fraction.

6. Number form: ________

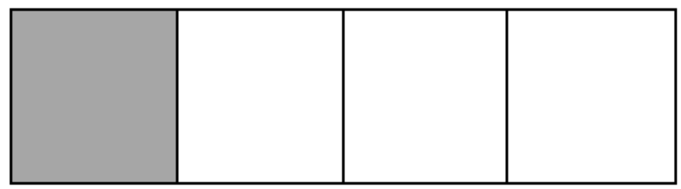
Word form: ______________________________

7. Number form: ________

Word form: ______________________________

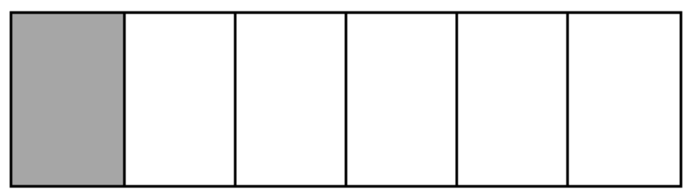
8. Number form: ________

Word form: ______________________________



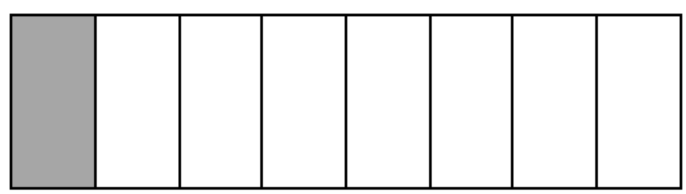
9. Number form: ________

Word form: ______________________________



10. Number form: ________

Word form: ______________________________



Name: ____ G3 U4 Lesson 2 - Independent Work

Directions: Use the word box to help complete each sentence.

numerator	**three**	**equal**	**four**	**denominator**

1. Fractions are created when a **whole** is cut into ___________________ size pieces.

2. The ___________________________ is the digit at the bottom of a fraction and represents the number of *total* pieces in the whole.

3. When you cut a whole into __________________ pieces, the size of the pieces is called **thirds.**

4. The ___________________________ is the digit at the top of a fraction and represents the number of pieces *out of* the whole - or the number of pieces we're giving away.

5. When you cut a whole into __________________ pieces, the size of the pieces is called **fourths.**

Directions: Divide each of the bars into the correct amount of equal pieces. Name the pieces.

6. Make **sixths** out of the whole.

Write a fraction to represent **one** piece: _____________
Now, label each piece of the whole in fraction form.

7. Make **eighths** out of the whole.

Write a fraction to represent **one** piece: _____________
Now, label each piece of the whole in fraction form.

8. Which of the wholes below show the correct way to represent $\frac{1}{3}$? Circle the correct answer.

a. 

b. 

c. 

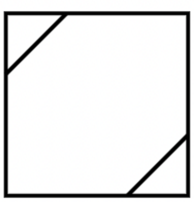
Explain why the other choices are incorrect.

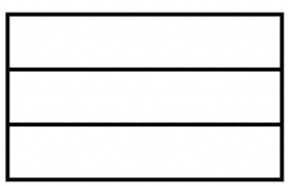
____

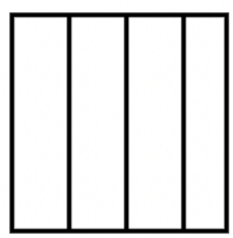
____

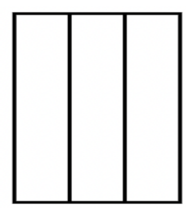
____

9. Which of the wholes below are correctly divided into thirds?
There is more than one answer. Circle all of the correct answers.

a. 

b. 

c. 

d. 

Explain why the other choices are incorrect.

____

____

____

Name: ANSWER KEY **G3 U4 Lesson 2 - Let's Try It**

Directions: Divide each of the bars into equal pieces. Write a fraction to represent **one** piece out of a whole.

1. Make **thirds** out of the whole.

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

Write a fraction to represent **one** piece: $\frac{1}{3}$

Now, label each piece of the whole in fraction form.

2. Make **fourths** out of the whole.

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

Write a fraction to represent **one** piece: $\frac{1}{4}$

Now, label each piece of the whole in fraction form.

3. Make **sixths** out of the whole.

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

Write a fraction to represent **one** piece: $\frac{1}{6}$

Now, label each piece of the whole in fraction form.

4. Make 2 equal pieces out of one whole.

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

Write a fraction to represent **one** piece: $\frac{1}{2}$

Now, label each piece of the whole in fraction form.

5. Make 3 equal pieces out of one whole.

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

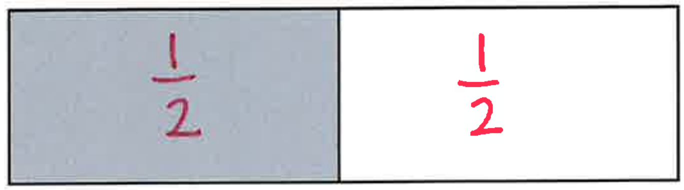
Write a fraction to represent **one** piece: $\frac{1}{3}$

Now, label each piece of the whole in fraction form.

Directions: Write the correct fraction in number and word form to represent the shaded pieces in each whole. Then, label each piece of the whole as a unit fraction.

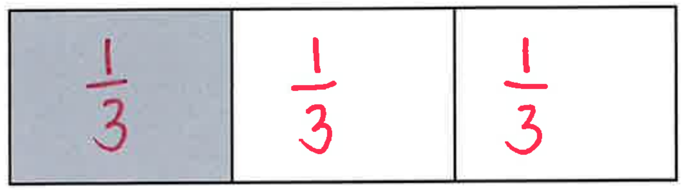
6. Number form: $\frac{1}{2}$

Word form: one-half



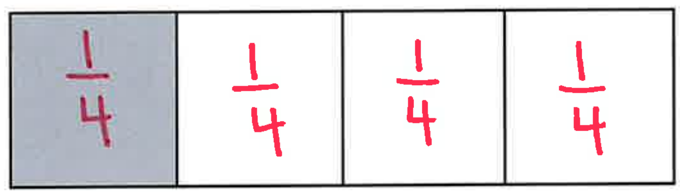
7. Number form: $\frac{1}{3}$

Word form: one-third



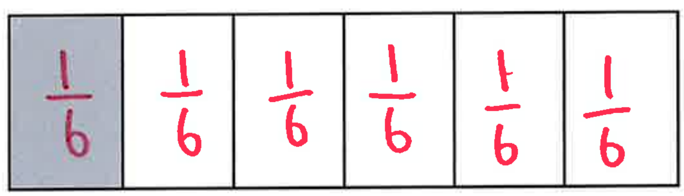
8. Number form: $\frac{1}{4}$

Word form: one-fourth



9. Number form: $\frac{1}{6}$

Word form: one-sixth



10. Number form: $\frac{1}{8}$

Word form: one-eighth

Name: ANSWER KEY

G3 U4 Lesson 2 - Independent Practice

Directions: Use the word box to help complete each sentence.

numerator	three	equal	four	denominator

1. Fractions are created when a **whole** is cut into ___equal___ size pieces.

2. The ___denominator___ is the digit at the bottom of a fraction and represents the number of *total* pieces in the whole.

3. When you cut a whole into ___three___ pieces, the size of the pieces is called **thirds.**

4. The ___numerator___ is the digit at the top of a fraction and represents the number of pieces *out of* the whole - or the number of pieces we're giving away.

5. When you cut a whole into ___four___ pieces, the size of the pieces is called **fourths.**

Directions: Divide each of the bars into the correct amount of equal pieces. Name the pieces.

6. Make **sixths** out of the whole.

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

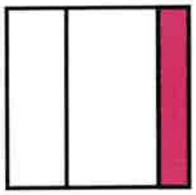
Write a fraction to represent **one** piece: ___$\frac{1}{6}$___
Now, label each piece of the whole in fraction form.

7. Make **eighths** out of the whole.

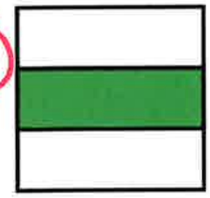
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

Write a fraction to represent **one** piece: ___$\frac{1}{8}$___
Now, label each piece of the whole in fraction form.

8. Which of the wholes below show the correct way to represent $\frac{1}{3}$? Circle the correct answer.

a. 

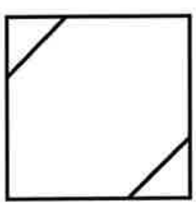
b. 

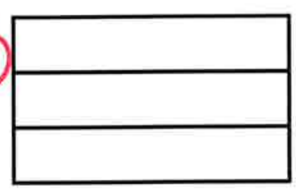
(c.) 

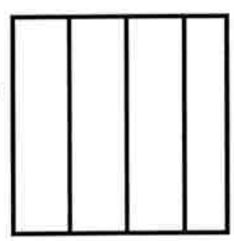
Explain why the other choices are incorrect.

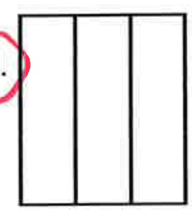
The other choices are wrong because (a) is not cut into equal pieces and (b) is cut into equal pieces, but into fourths, not thirds.

9. Which of the wholes below are correctly divided into thirds?
There is more than one answer. Circle all of the correct answers.

a. 

(b.) 

c. 

(d.) 

Explain why the other choices are incorrect.

(a) is wrong because it's not cut into equal pieces. (c) is wrong because it's also not cut into equal pieces and it's cut into four unequal pieces.

G3 U4 Lesson 3

Partition a whole into equal parts and name unit fractions on a number line

G3 U4 Lesson 3 - Partition a whole into equal parts and name unit fractions on a number line

Warm Welcome (Slide 1): Tutor choice.

Let's Review (Slide 2): Yesterday we learned that we can use numbers, or fractional notation, to describe pieces of 1 whole. We learned that the top digit, the numerator, in our fraction always stands for the number of pieces we're taking out of the whole and the bottom digit, the denominator, is the *total* number of pieces in my whole. Let's quickly write some fractions to describe the shaded part of these images.

- Look at A - Let's start with the denominator, the bottom digit. Count how many pieces are in 1 whole…2! That's the denominator (write it). And now let's count how many pieces are shaded in…1! So, this shaded part shows ½, or 1 out of 2 pieces.
- Look at B - Write the fraction that this shaded part shows on your white board or paper.
- Look at C - Write the fraction that this shaded part shows on your white board or paper.

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will continue partitioning, or *dividing*, a whole into **equal parts**. When we partition a whole into **equal** pieces, we create a **fraction** of the whole. In the last lesson, we wrote fractions in number form. We can split our wholes into halves, thirds, fourths, sixths, and eighths! Today, we're going to use those same skills and identify fractions on a number line!

Let's Talk (Slide 4): Before we start, look at these pictures. This is a football field. This is a speedometer that we find on the dashboard of a car. Here's a measuring cup, a clock, a scale we'd find at the grocery store, and here's a thermometer that tells us the temperature outside! They're all such different objects, **but what do they all have in common?** Possible Student Answers, Key Points:

- They all have numbers on them, some even have fractions!
- They all use numbers to tell us something (a clock to tell time, a speedometer tells us how fast we're going, a scale tells us how heavy our food is, etc.)

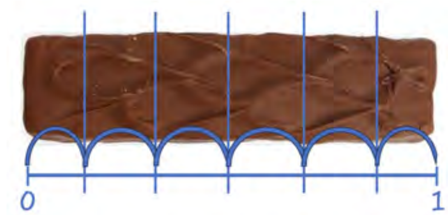
They all have numbers on them! They also all have NUMBER LINES. Number lines are a part of our daily lives!

Let's Think (Slide 4): Now, let's explore how we can use what we know about fractions to show fractions on a number line. This says to cut this Snickers bar into six equal pieces with your pencil. Let's do that.

You may not realize it, but we've already started making a number line! Now, watch as I show you how to make a number line.

(*Draw a line below the Snickers bar stretching from end to end. Draw a vertical tick at both ends - label the first tick **0** and the second **1***) That's a number line. See how I've marked the beginning of my number line as **0** and the end as **1**? I'm showing that I have ONE whole of something.

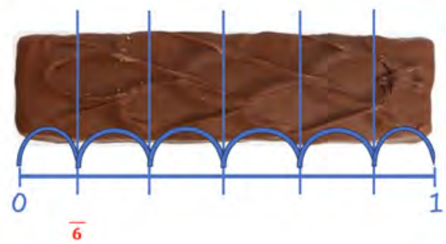
What's missing from this number line, though, is the number of pieces. That's where your cuts come in - you've already cut the whole into six pieces. All I need to do is put them on the actual number line! (*Extend each of the vertical lines onto the number line)*



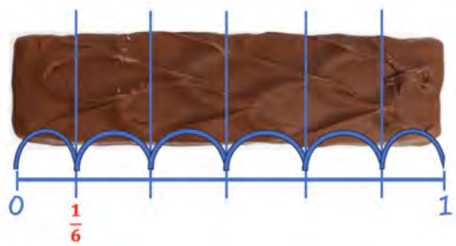
Let's check to make sure that the number line is six pieces. (*Draw "hops" across the top of each tick, counting aloud).*

Now that I've finished drawing my number line I need to label it! Remind me again, **what's a numerator and what's a denominator?** I need to know **both** of these terms if I want to write my fractions correctly! Possible Student Answers, Key Points:

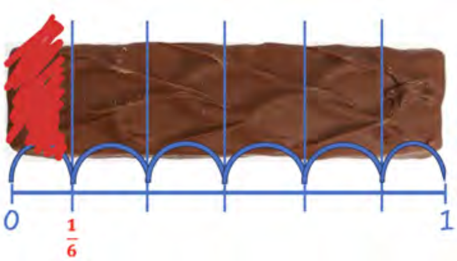
- The numerator tells us the number of pieces we're taking out of the whole.
- The denominator tells us the total number of pieces in the whole.



If the denominator tells us the **total** number of pieces in the whole, what would be the denominator for this number line? Six! (*Label the first tick after the zero with* $\frac{\ }{6}$ *and leave the numerator empty)* That's right! That's the number of pieces we counted over the whole number line.



The numerator is the number of pieces we're using *out of the whole*, so what would the numerator be for this first piece of Snickers we cut? One!

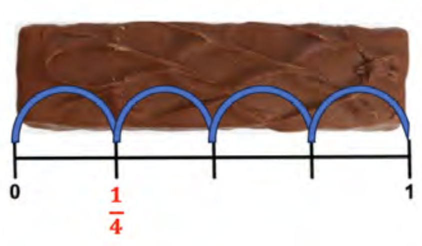


Note: If students are having a hard time understanding the question, shade in the first piece of the Snickers bar and ask them how many pieces are shaded? When they say "one," label the numerator as 1) If from **0** to the first tick is one piece of the Snickers bar, then my tick dash is $\frac{1}{6}$ to show that I'm representing just **one** piece.

Let's Think (Slide 5): Let's try this one together. This time we have a whole Snickers bar and the number line is already broken into pieces. Look at the number line.

How many pieces should the Snickers bar be cut into? I need to count the pieces on my number line to find out! How did I count my pieces on the number line in the last example? (*If students need the reminder, show them how to make the first "hop" in the same way as the example in Slide 4, then have them complete the hops themselves)*

How many pieces is our Snickers bar? *Four!* If my Snickers bar is cut into four pieces, what fractional unit am I using? *Fourths!*



So, I'm going to label my first tick $\frac{1}{4}$. Why does that make sense? Possible Student Answers, Key Points:

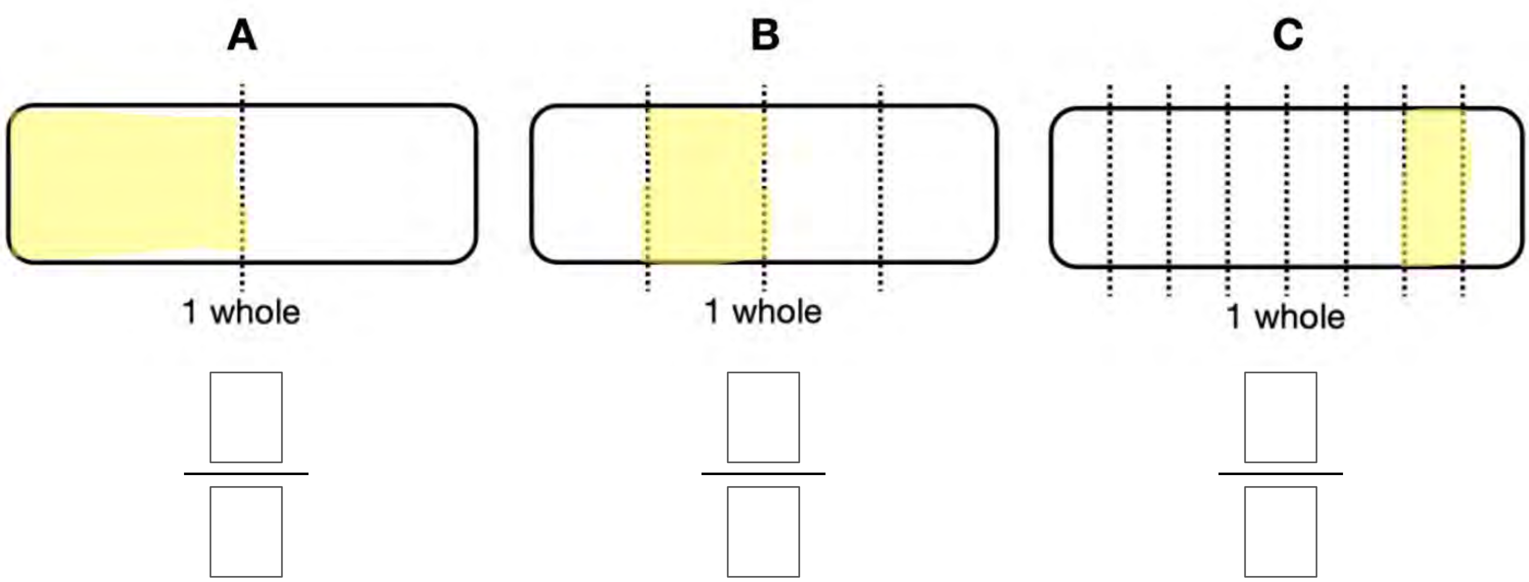
- The first tick represents **one** piece of the Snickers bar, so the numerator is 1.
- The denominator tells us the total number of pieces in the whole and there are four pieces of Snickers, so the denominator is 4.

That's right! We counted four pieces across our number line, so that tells us our denominator is four. But we're only focusing on the FIRST piece of the Snickers bar, so that means our numerator is 1. If we plugged those numbers into our fraction, we would have ¼!

Let's Try it (Slides 6): So, today, as we practice, remember that a number line is just like a bar model - they must be represented in equal sized pieces and the hops between 0 and 1 tell us the number of pieces your whole is broken into. Each time you make a number line, check you have the right number of pieces by counting your hops!

WARM WELCOME

Let's Review: We use fractional notation to describe pieces of a whole.



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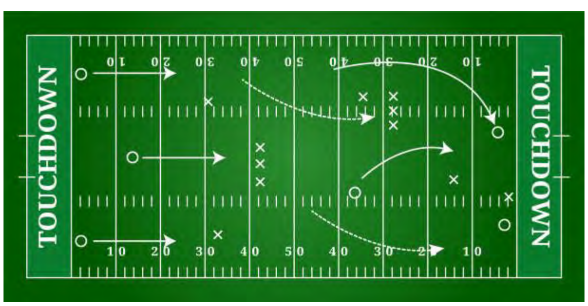
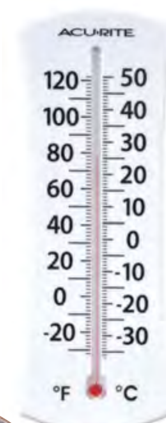
Today we will explore partitioning a whole into equal parts and naming unit fractions on a number line.

Let's Talk:





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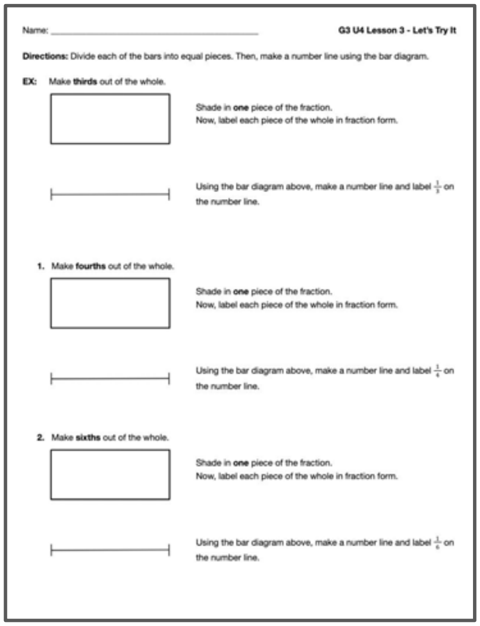
Let's Think:

Split this bar into SIXTHS.

Let's Think:

Let's Try It:


Name: ______________________ **G3 U4 Lesson 3 - Let's Try It**

Directions: Divide each of the bars into equal pieces. Then, make a number line using the bar diagram.

EX: Make **thirds** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar diagram above, make a number line and label $\frac{1}{3}$ on the number line.

1. Make **fourths** out of the whole.

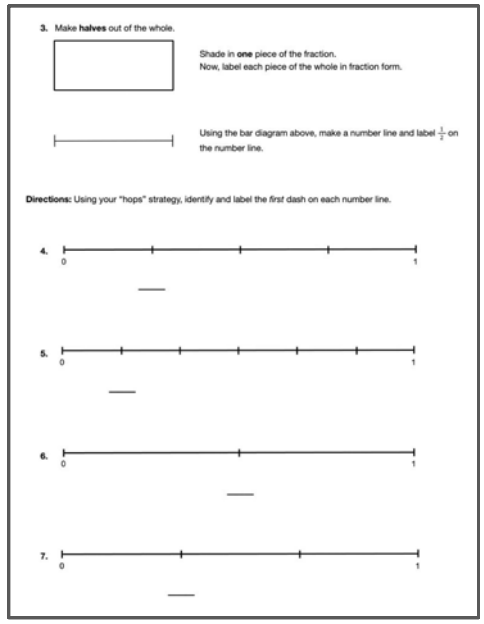
Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar diagram above, make a number line and label $\frac{1}{4}$ on the number line.

2. Make **sixths** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar diagram above, make a number line and label $\frac{1}{6}$ on the number line.


3. Make **halves** out of the whole.

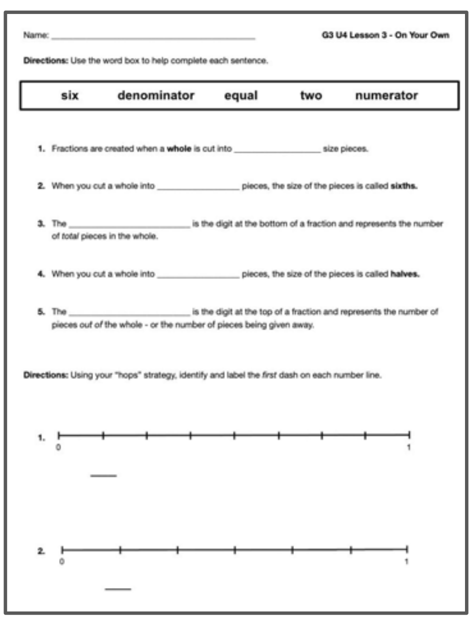
Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar diagram above, make a number line and label $\frac{1}{2}$ on the number line.

Directions: Using your "hops" strategy, identify and label the *first* dash on each number line.

4. 0 — 1
5. 0 — 1
6. 0 — 1
7. 0 — 1

On your Own:


Name: ______________________ **G3 U4 Lesson 3 - On Your Own**

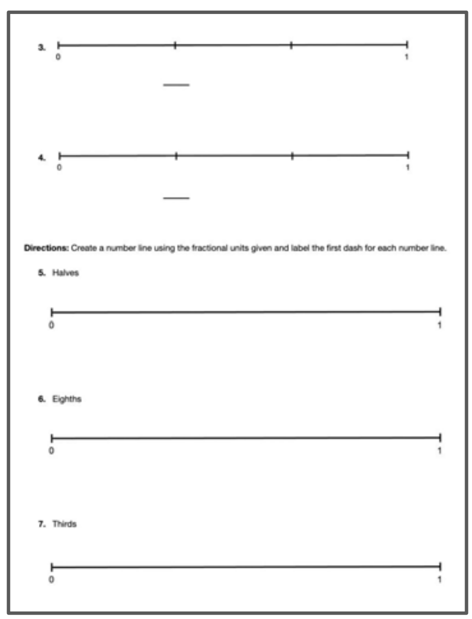
Directions: Use the word box to help complete each sentence.

six	denominator	equal	two	numerator

1. Fractions are created when a **whole** is cut into ______________ size pieces.
2. When you cut a whole into ______________ pieces, the size of the pieces is called **sixths.**
3. The ______________ is the digit at the bottom of a fraction and represents the number of *total* pieces in the whole.
4. When you cut a whole into ______________ pieces, the size of the pieces is called **halves.**
5. The ______________ is the digit at the top of a fraction and represents the number of pieces *out of* the whole - or the number of pieces being given away.

Directions: Using your "hops" strategy, identify and label the *first* dash on each number line.

1. 0 — 1
2. 0 — 1


3. 0 — 1
4. 0 — 1

Directions: Create a number line using the fractional units given and label the first dash for each number line.

5. Halves
0 — 1

6. Eighths
0 — 1

7. Thirds
0 — 1

Name: ____ **G3 U4 Lesson 3 - Let's Try It**

Directions: Divide each of the bars into equal pieces. Then, make a number line using the bar model.

EX: Make **thirds** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar model above, make a number line and label $\frac{1}{3}$ on the number line.

1. Make **fourths** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar model above, make a number line and label $\frac{1}{4}$ on the number line.

2. Make **sixths** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar model above, make a number line and label $\frac{1}{6}$ on the number line.

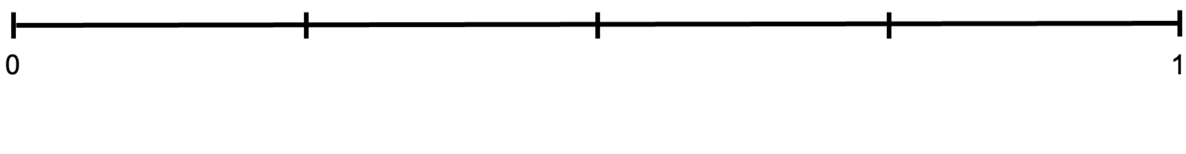
3. Make **halves** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Using the bar model above, make a number line and label $\frac{1}{2}$ on the number line.

Directions: Using your "hops" strategy, identify and label the *first* dash on each number line.

4.



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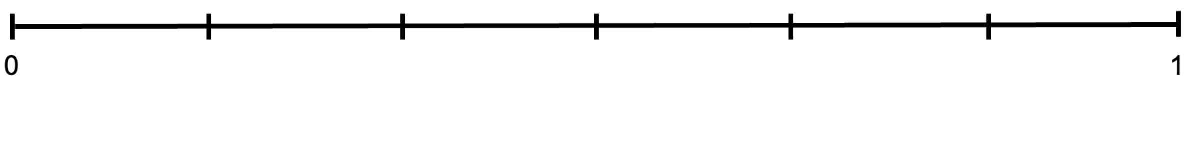

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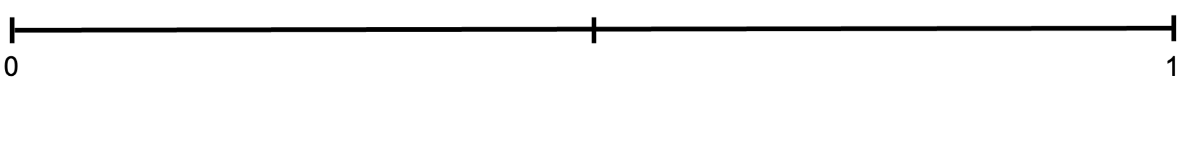

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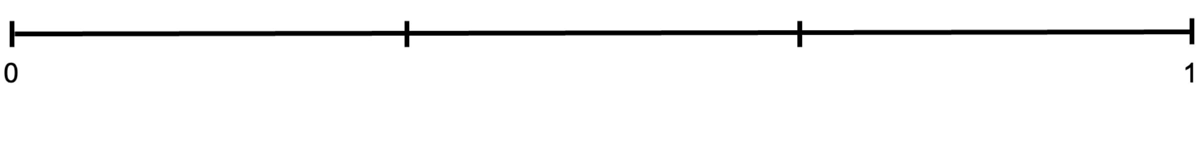


Name: ____ **G3 U4 Lesson 3 - Independent Work**

Directions: Use the word box to help complete each sentence.

six denominator equal two numerator

1. Fractions are created when a **whole** is cut into ___________________ size pieces.

2. When you cut a whole into __________________ pieces, the size of the pieces is called **sixths.**

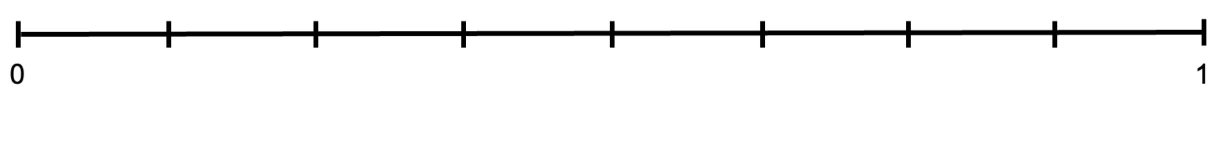
3. The ___________________________ is the digit at the bottom of a fraction and represents the number of *total* pieces in the whole.

4. When you cut a whole into __________________ pieces, the size of the pieces is called **halves.**

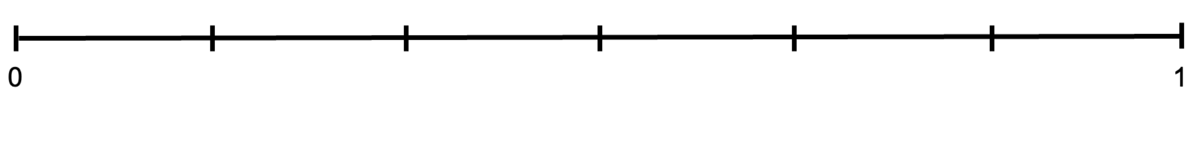
5. The ___________________________ is the digit at the top of a fraction and represents the number of pieces *out of* the whole - or the number of pieces being given away.

Directions: Using your "hops" strategy, identify and label the *first* dash on each number line.

1.



2.



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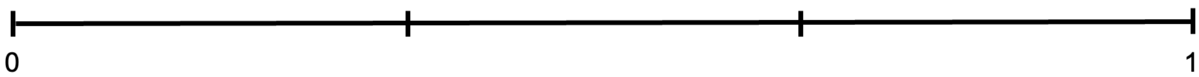
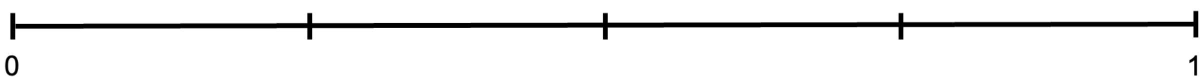
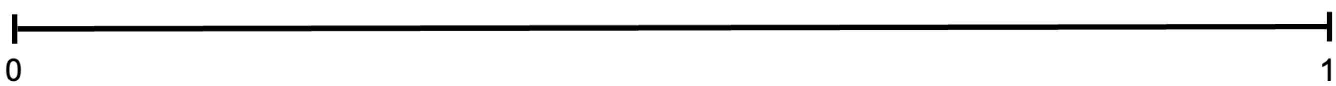


4.

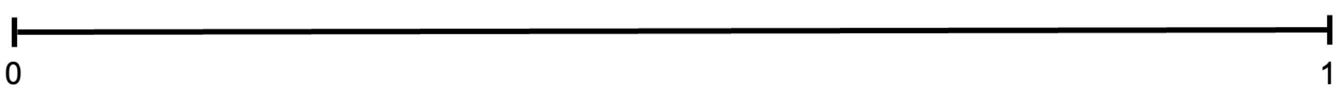


Directions: Create a number line using the fractional units given and label the first dash for each number line.

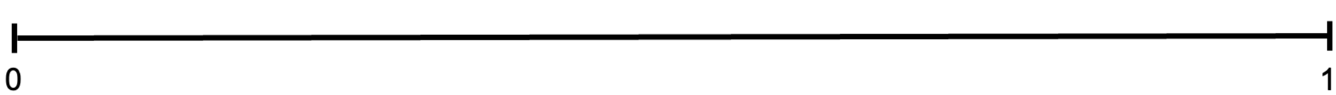
5. Halves



6. Eighths



7. Thirds

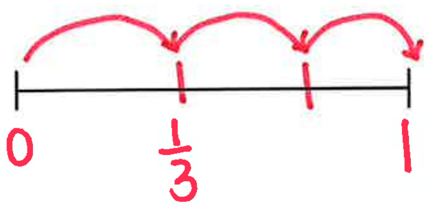


Name: ANSWER KEY

Directions: Divide each of the bars into equal pieces. Then, make a number line using the bar model.

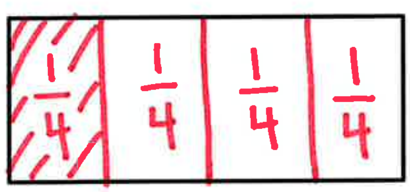
EX: Make **thirds** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

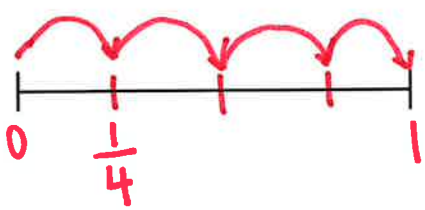


Using the bar model above, make a number line and label $\frac{1}{3}$ on the number line.

1. Make **fourths** out of the whole.

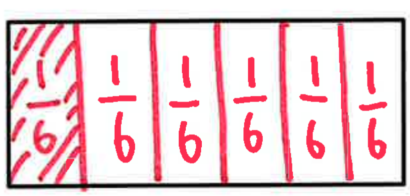


Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

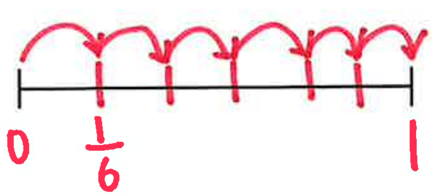


Using the bar model above, make a number line and label $\frac{1}{4}$ on the number line.

2. Make **sixths** out of the whole.



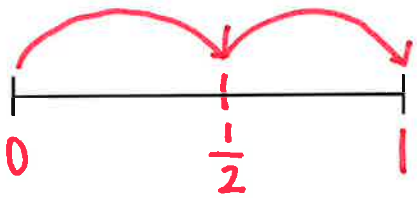
Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.



Using the bar model above, make a number line and label $\frac{1}{6}$ on the number line.

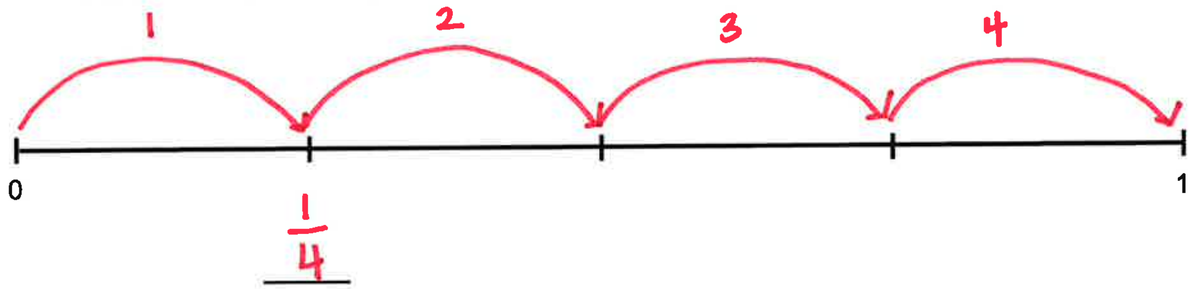
3. Make **halves** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.



Using the bar model above, make a number line and label $\frac{1}{2}$ on the number line.

Directions: Using your "hops" strategy, identify and label the *first* dash on each number line.

4.


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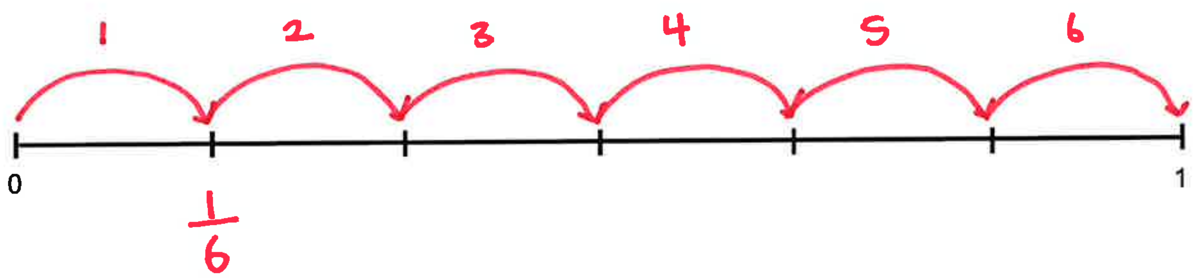

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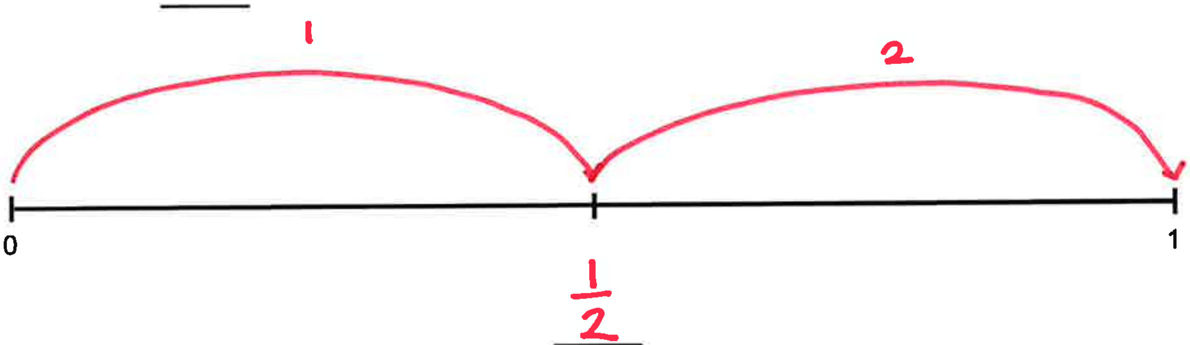

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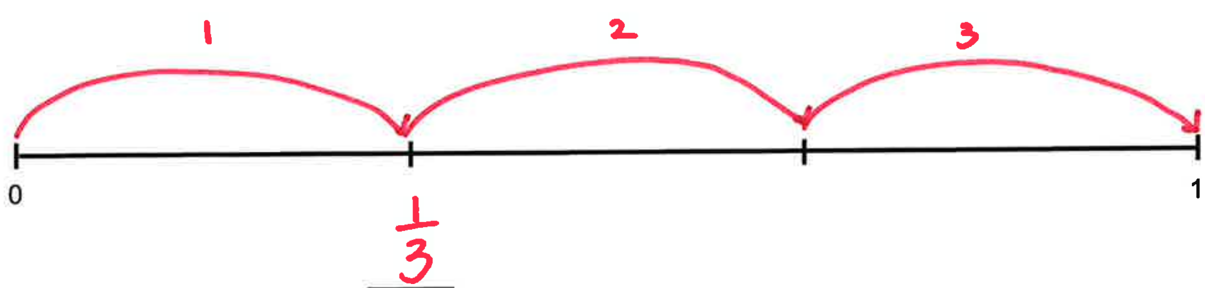


Name: ANSWER KEY **G3 U4 Lesson 3 - Independent Practice**

Directions: Use the word box to help complete each sentence.

six	denominator	equal	two	numerator

1. Fractions are created when a **whole** is cut into equal size pieces.

2. When you cut a whole into six pieces, the size of the pieces is called **sixths.**

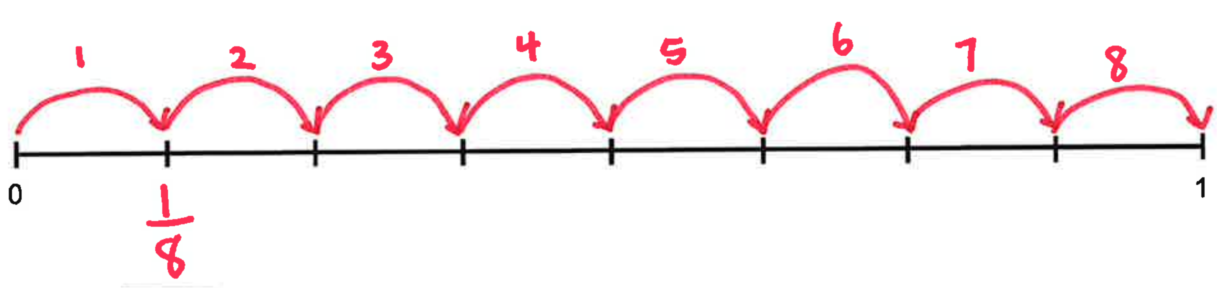
3. The denominator is the digit at the bottom of a fraction and represents the number of *total* pieces in the whole.

4. When you cut a whole into two pieces, the size of the pieces is called **halves.**

5. The numerator is the digit at the top of a fraction and represents the number of pieces *out of* the whole - or the number of pieces being given away.

Directions: Using your "hops" strategy, identify and label the *first* dash on each number line.

1.



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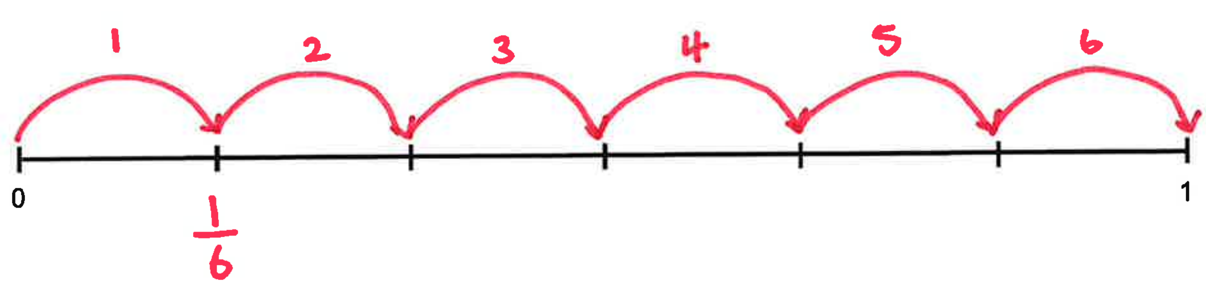

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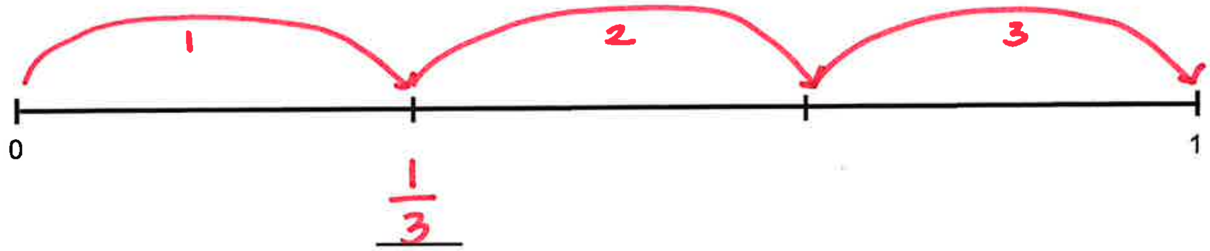

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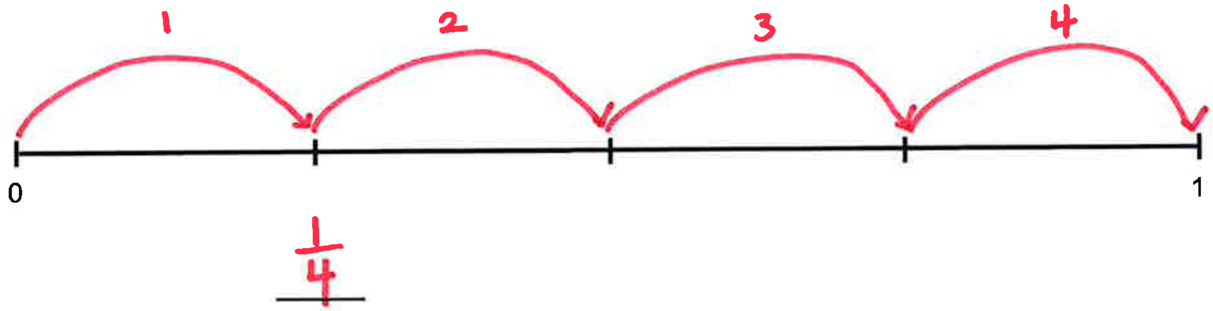
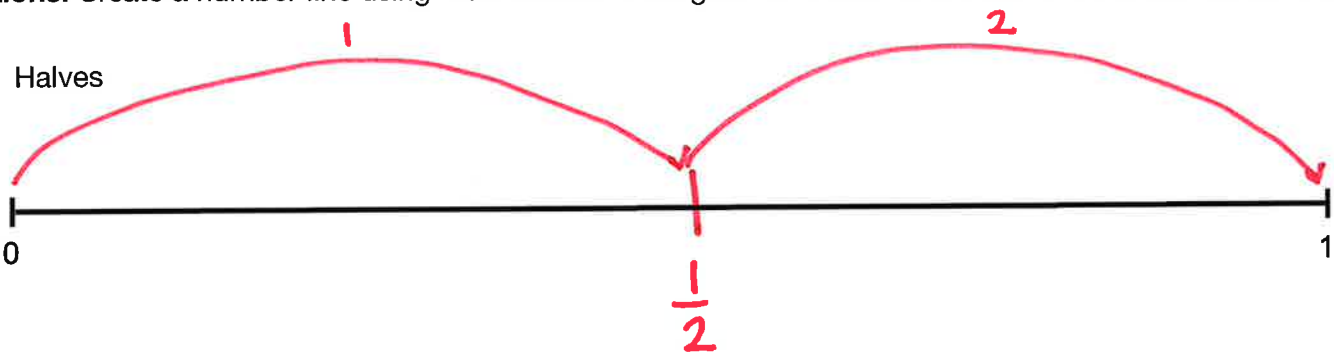
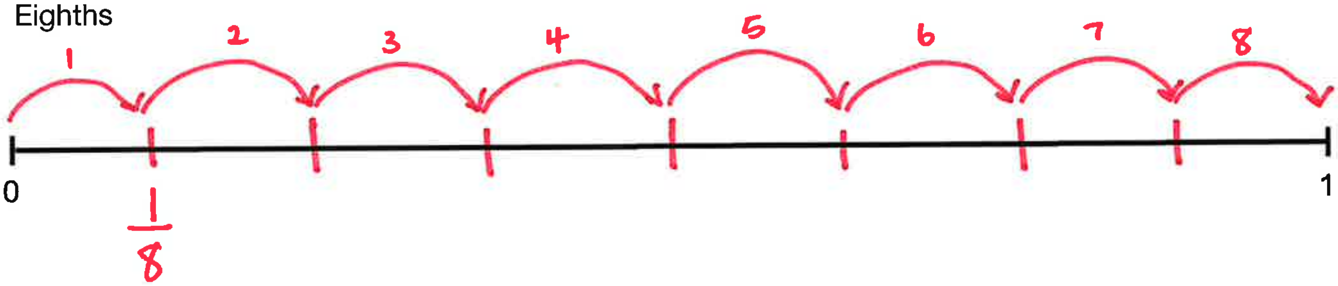


Directions: Create a number line using the fractional units given and label the first dash for each number line.

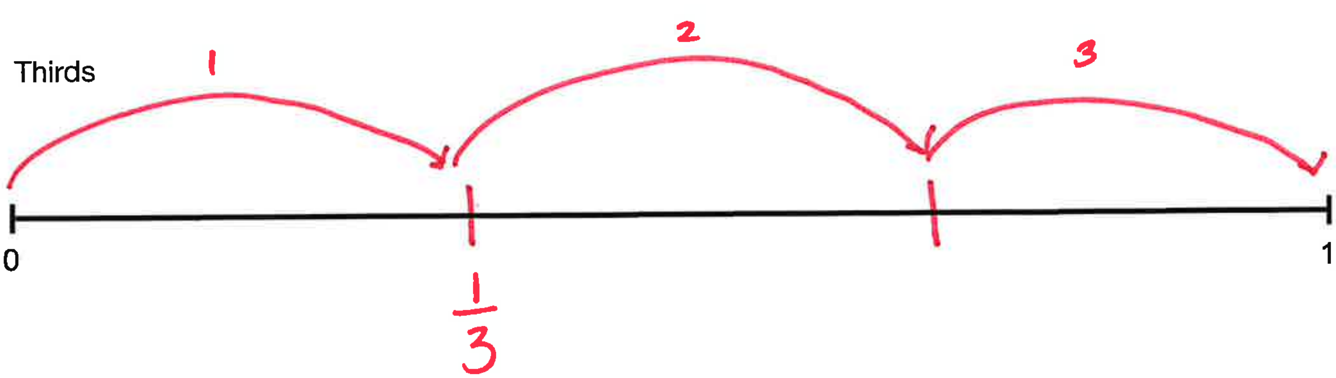
5. Halves



6. Eighths



7. Thirds



G3 U4 Lesson 4

Explore non-unit fractions less than one whole on a number line

CITYTUTOR DC

G3 U4 Lesson 4 - Students will explore non-unit fractions less than one whole on a number line

Warm Welcome (Slide 1): Tutor choice.

Let's Review (Slide 2): Remember in the last lesson, we showed how we can create a number line by using fraction bars as a guiding tool. The same rules for fractions still apply - all pieces must be equal sizes and the numerator and denominator must be represented accurately. Let's look at these two number lines and practice writing fractions to represent the points on the number lines:

- Look at Point A - Let's write a fraction to represent Point A. Remember, we can always draw a bar above the number line to help us visualize the fractions. Let's start with how many pieces there are in 1 whole. We count the hops starting at 0 all the way to one…1, 2, 3. There are 3 pieces in 1 whole, that means that we are working with thirds and our denominator will be 3. The point is at 1. So this point shows ⅓ (*label).*
- Look at Point B - Write a fraction on your white board or paper to represent Point B on the number line.

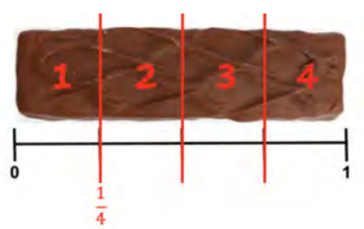
Frame the Learning/Connect to Prior Learning (Slide 3): Today we will continue our work with fractions on number lines.

Let's Talk (Slide 3): Before we start, let's remind ourselves of what we already know about reading a number line. For example, here I created a number line to help me divide my Snickers bar into four pieces to share with my friends. **How did I do?** Possible Student Answers, Key Points:

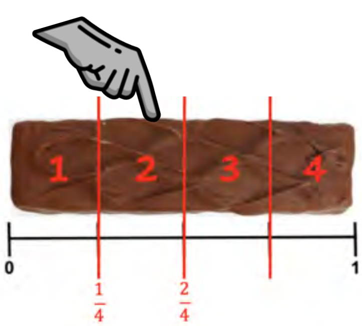
- The pieces aren't even - you can't draw a fraction with unequal pieces
- The dashes on the number line need to be equally spaced apart or else it's not a fraction - that makes the sizes of the pieces unfair for each of your friends!

Oh! You're right! Silly me. Let me fix that on the next slide.

Let's Think (Slide 4): Ok, so here the Snickers is cut into 4 EQUAL pieces, that's much better! Now, what would be the fractional notation for this first dash on our number line? ¼! So, this leads us to our lesson for today. If the first dash represents ¼ because it's one piece of the Snickers bar, what would the next dash represent?

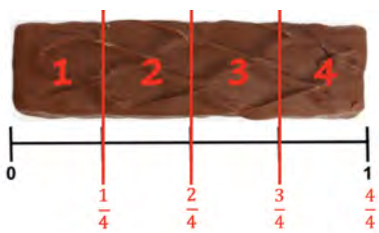


Give students a chance to answer. Well, let's cut this Snickers to help us. We are cutting it into 1, 2, 3, 4 equal-sized pieces. Now let's label each piece. This is one piece, if I have both of these that would be 2 pieces, all of these it would be 3 pieces, and 4 pieces.



So, if I have just this 1 piece, I have ¼. But, how many pieces of Snickers do I have if I stop here? (*Point to the second piece)* Two pieces!

So, think about what you know about fractions and tell me, how would we write a fraction for **2** pieces of Snickers out of **4** pieces total? There are still 4 total pieces in 1 whole, so the denominator stays the same. But now, I don't have 1 out of 4, I have 2 total pieces out of 4. So I would write this as $\frac{2}{4}$**.**

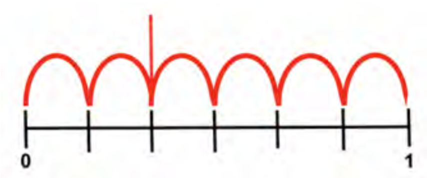


How many pieces of Snickers do I have if I stop here? (*Point to the third piece)* Three pieces! So, think about what you know about fractions and tell me, how would we write a fraction for **3** pieces of Snickers out of **4** pieces total? (*Allow students to write* $\frac{3}{4}$ *on the slide or on whiteboards.*)

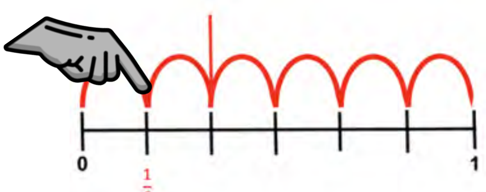
And finally, if I stop at 1 whole, what's a fraction I can write to represent 1 whole? Well, the denominator stays the same, 4 pieces. But now, I have 4 out of 4 total pieces, just like we described 1 whole as 4 fourths. So I can write $\frac{4}{4}$ to represent the 1 whole.

Let's Think (Slide 6): Let's try this work *without* our Snickers bar. You can still picture it in your head, though, if that helps! Let's take a look at this number line. **We need to figure out what fraction is represented by the dash that the arrow is pointing at. How do I do that?** Possible Student Answers, Key Points:

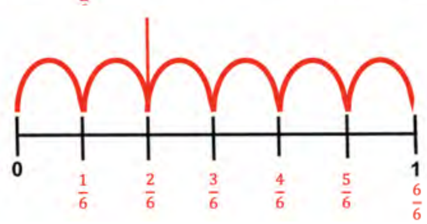
- I count the pieces my whole is divided into - I do that by hopping across the number line and counting up the total number of pieces!
- The number line is divided into 6 parts. The first tick is the first piece. That's 1 out of 6. The fraction is $\frac{1}{6}$.
- The second tick is 2 pieces out of a total of 6 pieces, so the fraction is $\frac{2}{6}$.



That's right! The first thing I need to do is figure out how many pieces are in 1 whole. I see the 0 and the 1 so this is all 1 whole (*point to the space from 0 to 1*). Let's count how many pieces are in 1 whole. Count with me (*Draw in the jumps as you count*)...1, 2, 3, 4, 5, 6! So I know that this whole is split into 6 equal pieces.



I can use that to help me label the number line. I know that the denominator tells me how many pieces there are in 1 whole and the numerator tells me how many pieces I have. This is 1 out of 6, I am going to label it as $\frac{1}{6}$.



Let's continue labeling until we have every tick labeled. This is 2 out of 6, this is 3 out of 6, etc. (*Continue counting and labeling until you have* $\frac{6}{6}$ *labeled*). Now, if I go back, I can see that this arrow is pointing to $\frac{2}{6}$!

Let's Think (Slide 7): Great job! Now let's try it with the same number line, but further down! **How would we figure out the fraction where the arrow is pointing?** Possible Student Answers, Key Points:

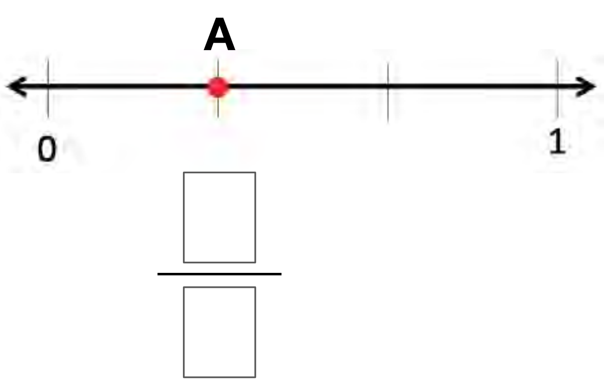
- I know my number line is divided into 6 pieces, so I just need to "hop" down to the tick with the arrow.
- The arrow stops after 4 pieces out of the total 6 pieces, so the fraction is $\frac{4}{6}$.
- This is correct because if I imagine a Snickers bar above the number line, the dash would be 4 Snickers bar pieces out of 6 Snickers bar pieces!

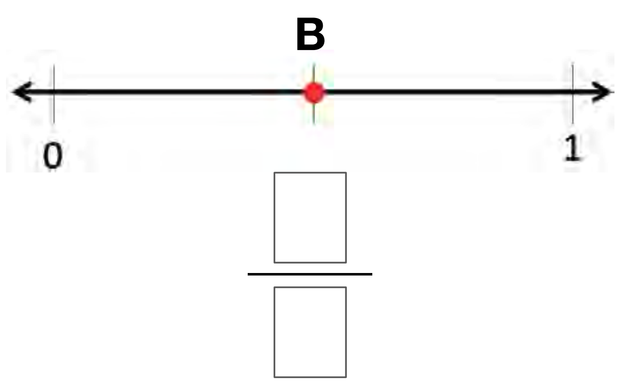
That's exactly right, this arrow is pointing to $\frac{4}{6}$ and because I showed my work and labeled the whole number line in the last slide, it was easy to read and figure that out!

Let's Try it (Slides 7): So, today as we practice, remember our steps to creating and labeling a number line. The distance between each piece of a number line must be equally sized. We can use hops to make sure we have the right number of pieces represented. And we can always draw our own Snickers bar if we need a little help picturing the number of pieces on a number line!

WARM WELCOME

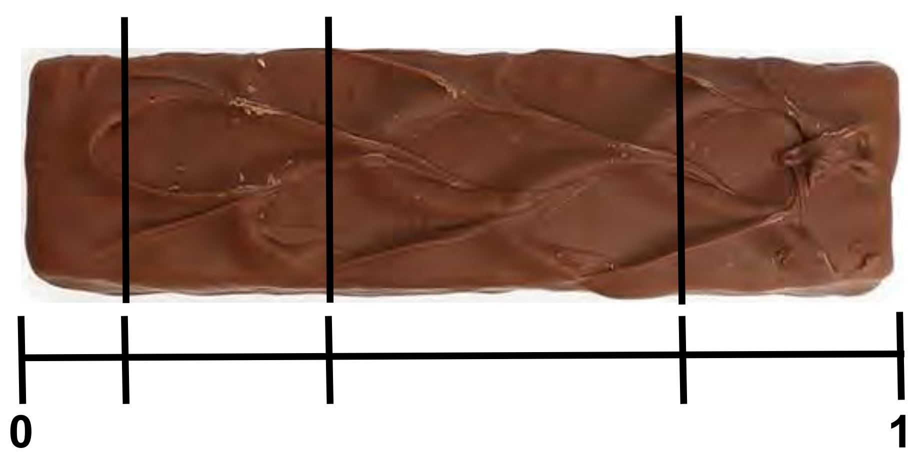
Let's Review: We can show unit fractions on a number line.





Today we will explore non-unit fractions less than one whole on a number line.

Let's Talk:



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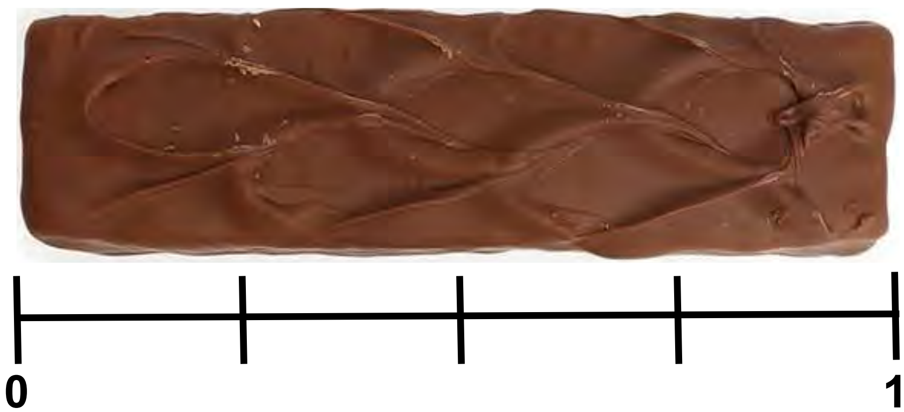
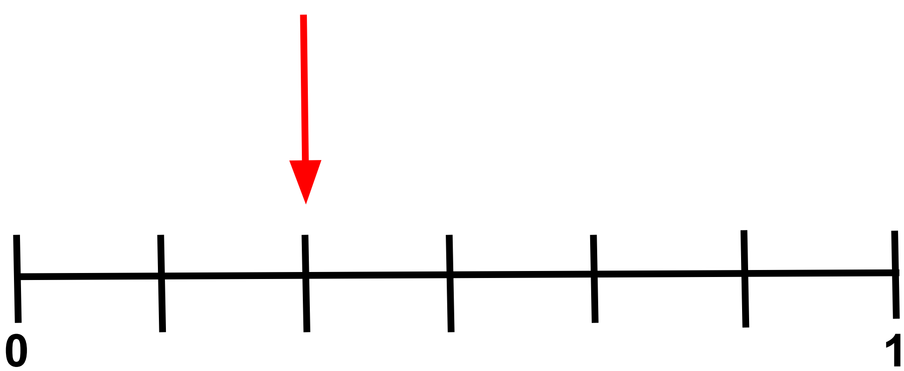
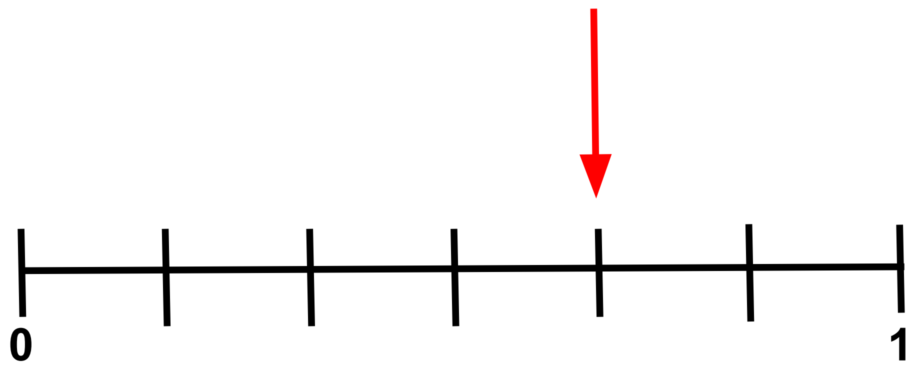
Let's Think:



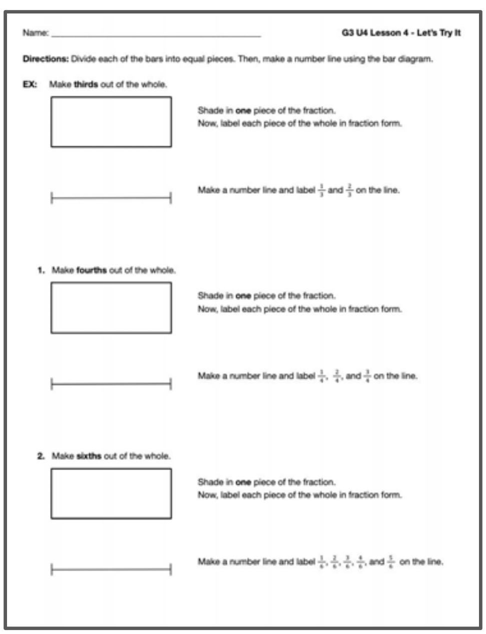
Let's Think:



Let's Think:



Let's Try It:



Name: ______________________ **G3 U4 Lesson 4 - Let's Try It**

Directions: Divide each of the bars into equal pieces. Then, make a number line using the bar diagram.

EX: Make **thirds** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Make a number line and label $\frac{1}{3}$ and $\frac{2}{3}$ on the line.

1. Make **fourths** out of the whole.

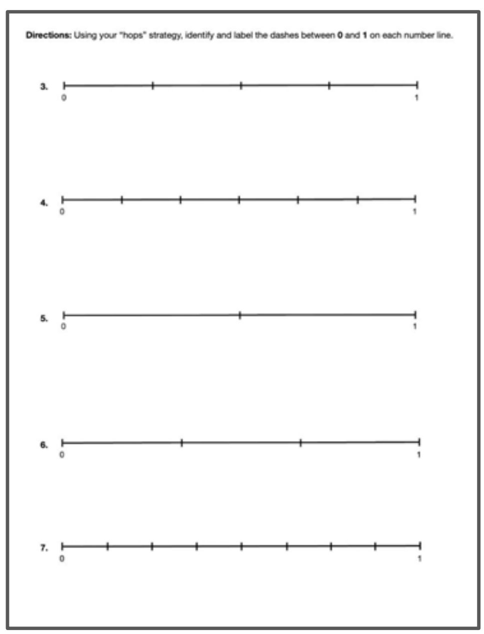
Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Make a number line and label $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ on the line.

2. Make **sixths** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Make a number line and label $\frac{1}{6}$, $\frac{2}{6}$, $\frac{3}{6}$, $\frac{4}{6}$, and $\frac{5}{6}$ on the line.



Directions: Using your "hops" strategy, identify and label the dashes between **0** and **1** on each number line.

3. 0 1

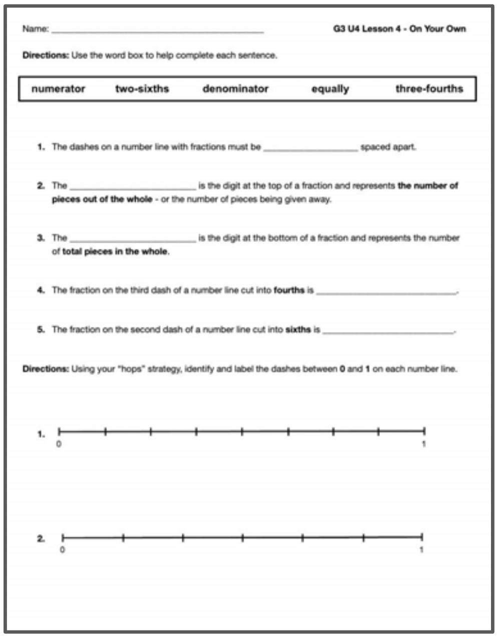
4. 0 1

5. 0 1

6. 0 1

7. 0 1

On your Own:



Name: ________________________ **G3 U4 Lesson 4 - On Your Own**

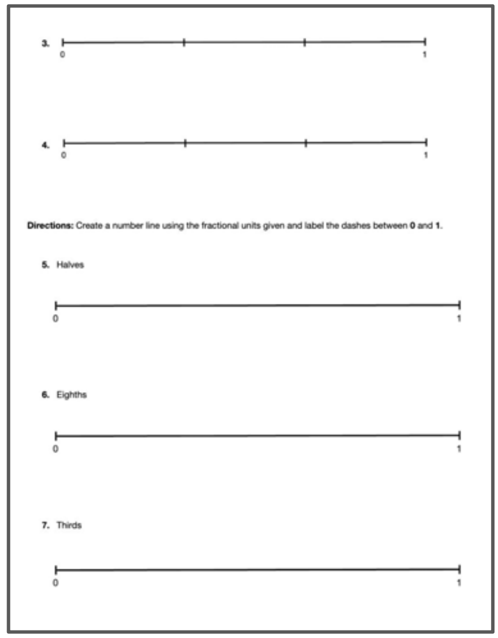
Directions: Use the word box to help complete each sentence.

numerator	**two-sixths**	**denominator**	**equally**	**three-fourths**

1. The dashes on a number line with fractions must be ______________ spaced apart.
2. The ____________________ is the digit at the top of a fraction and represents **the number of pieces out of the whole** - or the number of pieces being given away.
3. The ____________________ is the digit at the bottom of a fraction and represents the number of **total pieces in the whole**.
4. The fraction on the third dash of a number line cut into **fourths** is ____________________.
5. The fraction on the second dash of a number line cut into **sixths** is ____________________.

Directions: Using your "hops" strategy, identify and label the dashes between **0** and **1** on each number line.

1. 0 1
2. 0 1



3. 0 1
4. 0 1

Directions: Create a number line using the fractional units given and label the dashes between **0** and **1**.

5. Halves
0 1
6. Eighths
0 1
7. Thirds
0 1

Name: ____

Directions: Divide each of the bars into equal pieces. Then, make a number line using the bar diagram.

EX: Make **thirds** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Make a number line and label $\frac{1}{3}$ and $\frac{2}{3}$ on the line.

1. Make **fourths** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Make a number line and label $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ on the line.

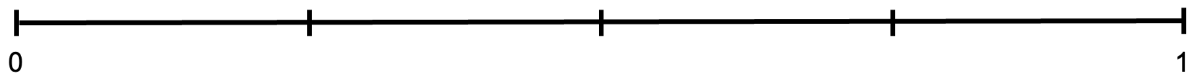
2. Make **sixths** out of the whole.

Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

Make a number line and label $\frac{1}{6}$, $\frac{2}{6}$, $\frac{3}{6}$, $\frac{4}{6}$, and $\frac{5}{6}$ on the line.

Directions: Using your "hops" strategy, identify and label the dashes between **0** and **1** on each number line.

3.



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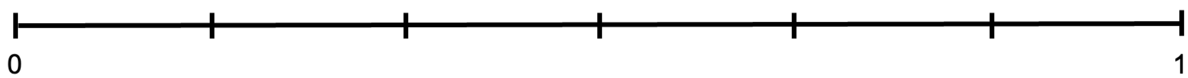

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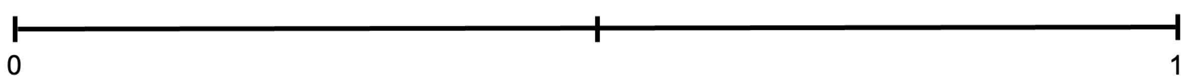

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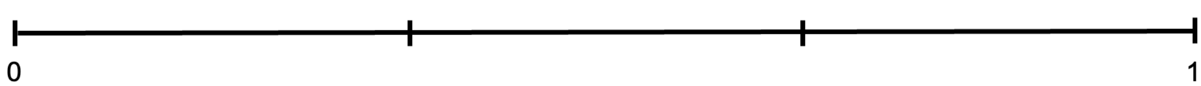

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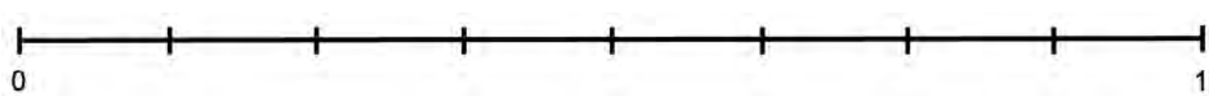


Name: ____ G3 U4 Lesson 4 - Independent Work

Directions: Use the word box to help complete each sentence.

numerator	**two-sixths**	**denominator**	**equally**	**three-fourths**

1. The dashes on a number line with fractions must be ____________________ spaced apart.

2. The ___________________________ is the digit at the top of a fraction and represents **the number of pieces out of the whole** - or the number of pieces being given away.

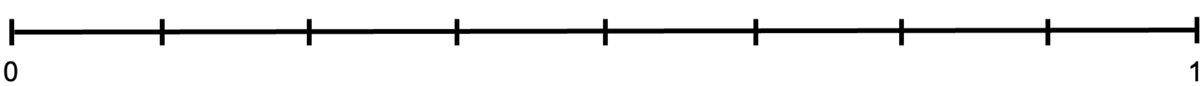
3. The ___________________________ is the digit at the bottom of a fraction and represents the number of **total pieces in the whole**.

4. The fraction on the third dash of a number line cut into **fourths** is ______________________________.

5. The fraction on the second dash of a number line cut into **sixths** is ____________________________.

Directions: Using your "hops" strategy, identify and label the dashes between **0** and **1** on each number line.

1.



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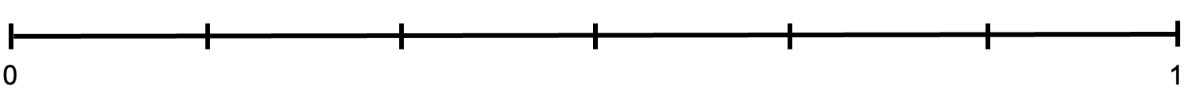

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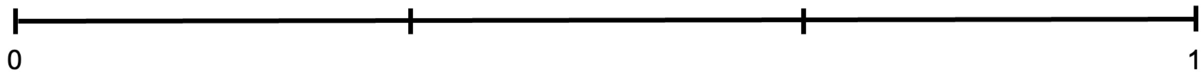

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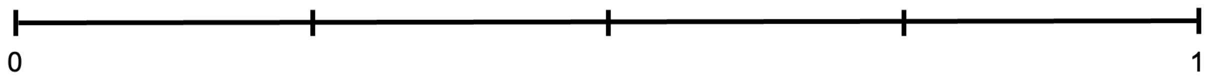
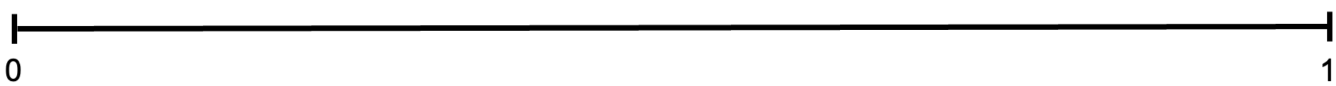
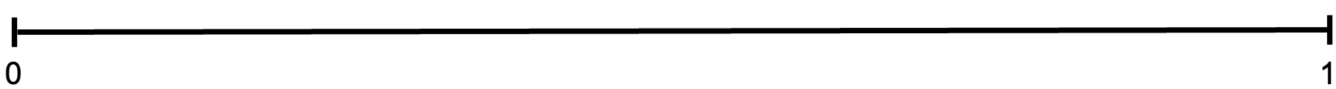


Directions: Create a number line using the fractional units given and label the dashes between **0** and **1**.

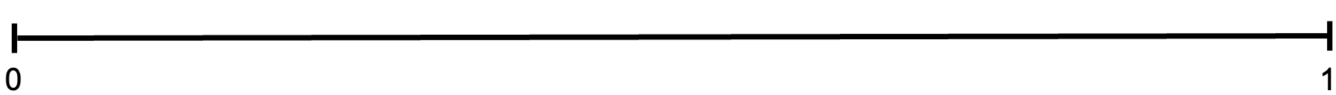
5. Halves



6. Eighths



7. Thirds

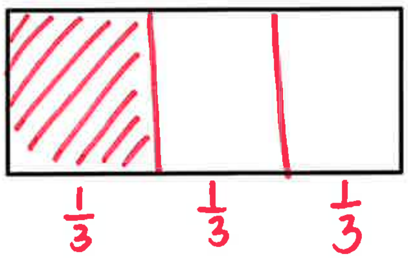


Name: ANSWER KEY

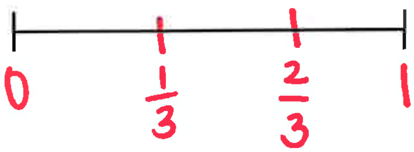
G3 U4 Lesson 4 - Let's Try It

Directions: Divide each of the bars into equal pieces. Then, make a number line using the bar diagram.

EX: Make **thirds** out of the whole.

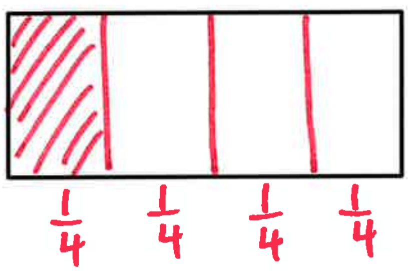


Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

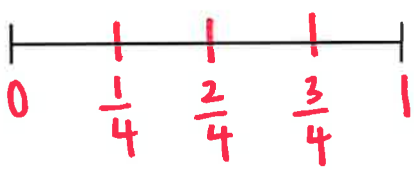


Make a number line and label $\frac{1}{3}$ and $\frac{2}{3}$ on the line.

1. Make **fourths** out of the whole.

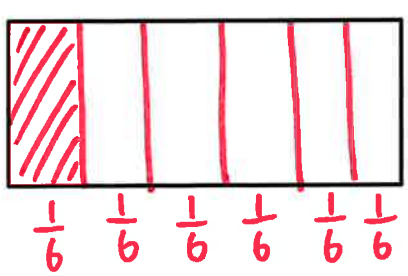


Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.

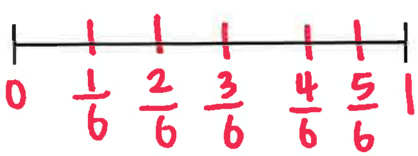


Make a number line and label $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ on the line.

2. Make **sixths** out of the whole.



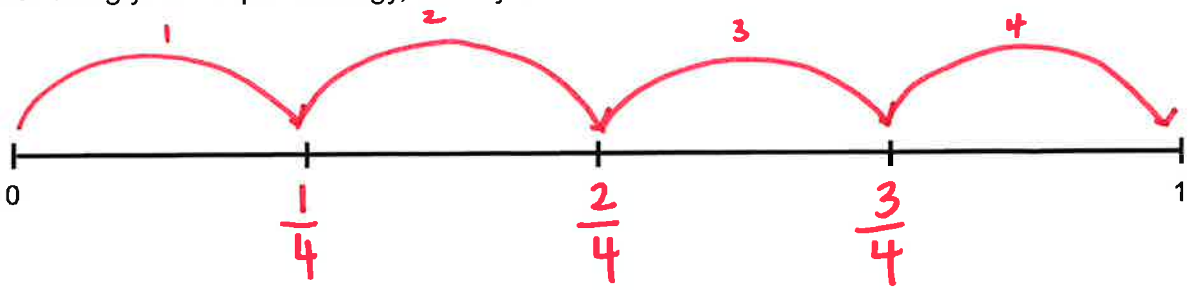
Shade in **one** piece of the fraction.
Now, label each piece of the whole in fraction form.



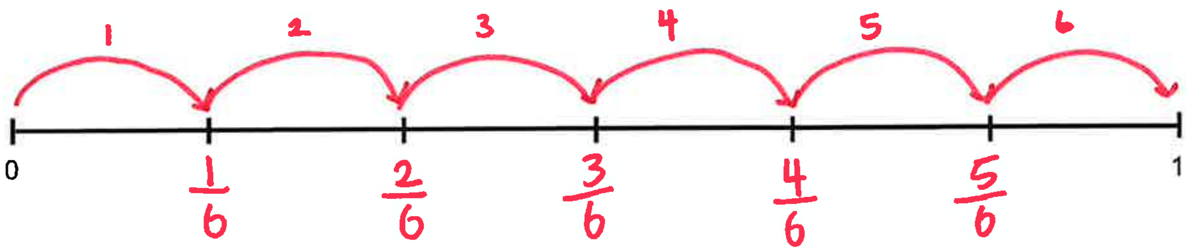
Make a number line and label $\frac{1}{6}$, $\frac{2}{6}$, $\frac{3}{6}$, $\frac{4}{6}$, and $\frac{5}{6}$ on the line.

Directions: Using your "hops" strategy, identify and label the dashes between **0** and **1** on each number line.

3.



4.



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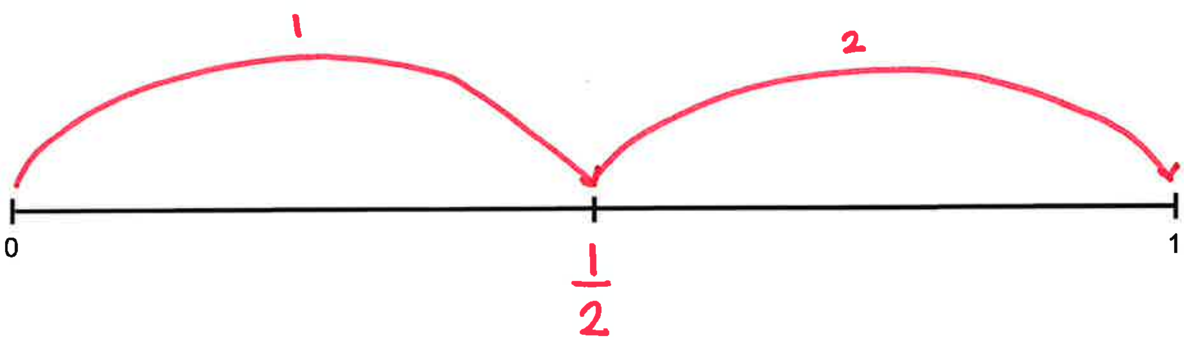

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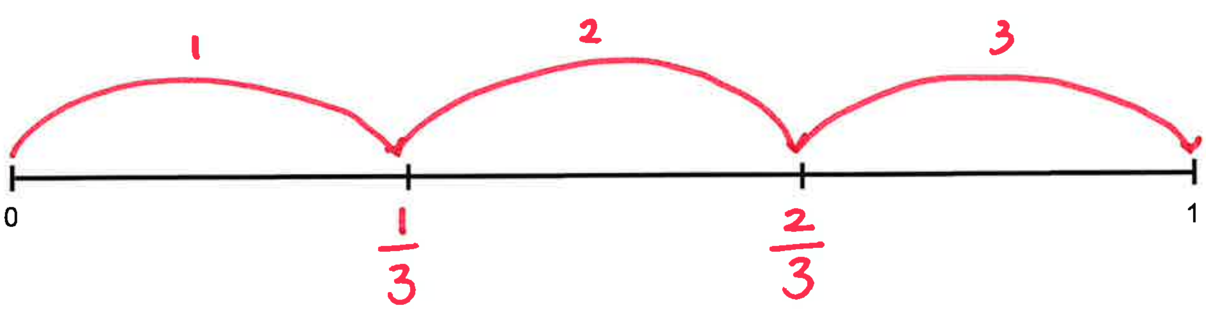

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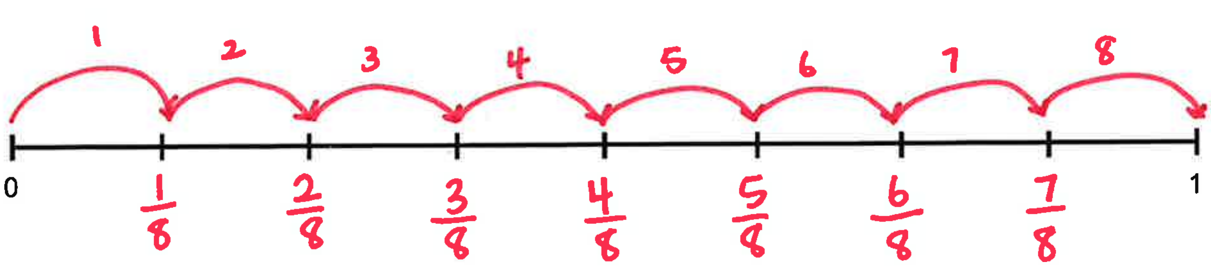


Name: ANSWER KEY **G3 U4 Lesson 4 - Independent Practice**

Directions: Use the word box to help complete each sentence.

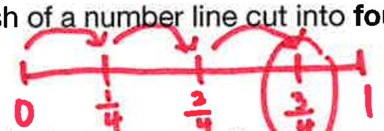
numerator	**two-sixths**	**denominator**	**equally**	**three-fourths**

1. The dashes on a number line with fractions must be ___equally___ spaced apart.

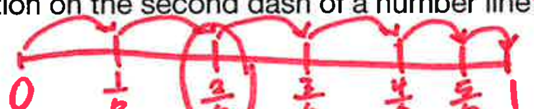
2. The ___numerator___ is the digit at the top of a fraction and represents **the number of pieces out of the whole** - or the number of pieces being given away.

3. The ___denominator___ is the digit at the bottom of a fraction and represents the number of **total pieces in the whole**.

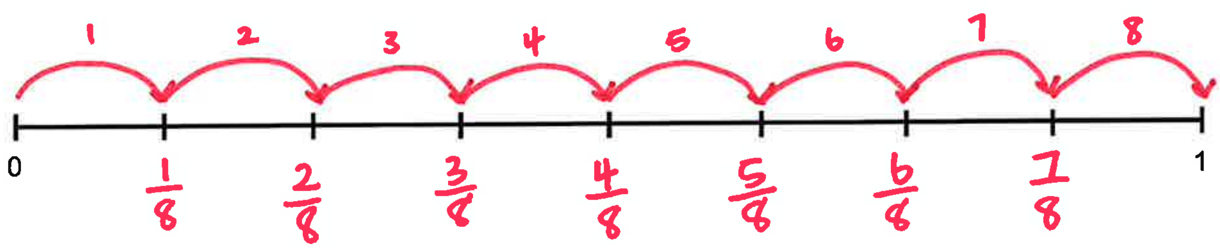
4. The fraction on the third dash of a number line cut into **fourths** is ___$\frac{3}{4}$___.

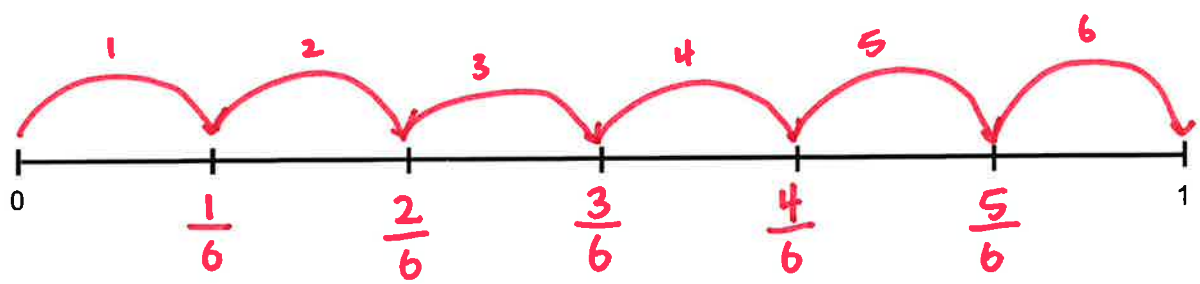


5. The fraction on the second dash of a number line cut into **sixths** is ___$\frac{2}{6}$___.



Directions: Using your "hops" strategy, identify and label the dashes between **0** and **1** on each number line.

1. 

2. 

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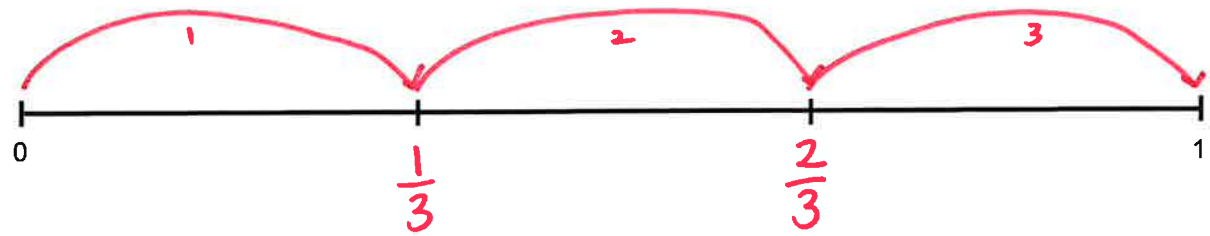

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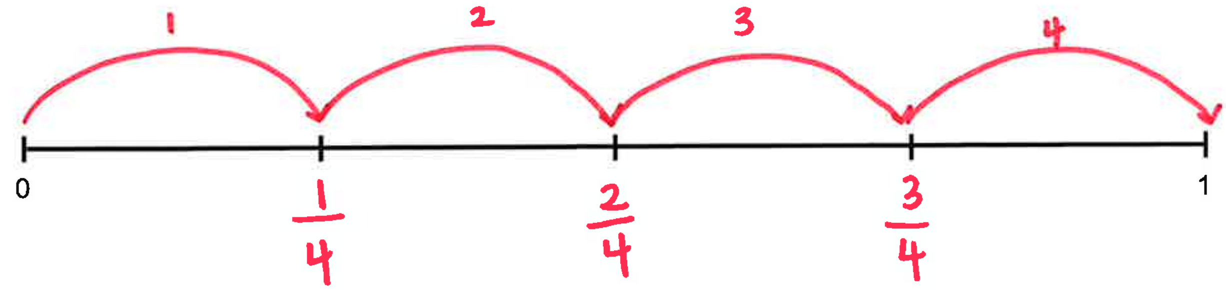
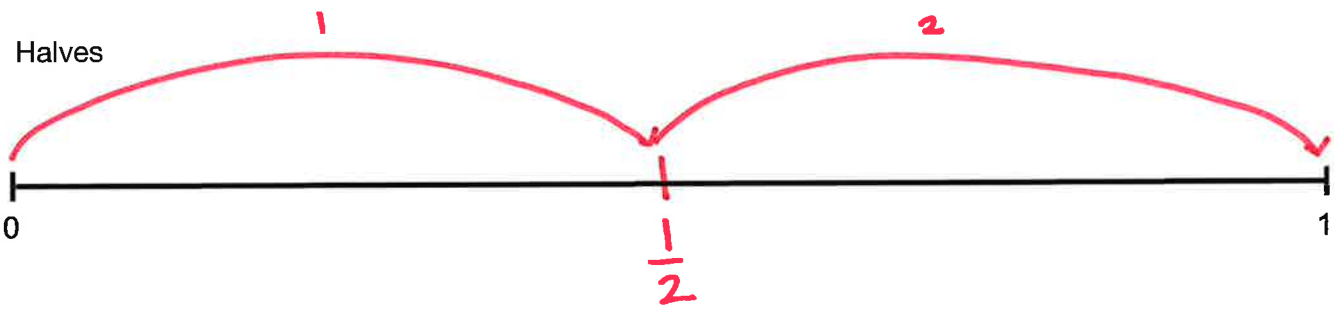
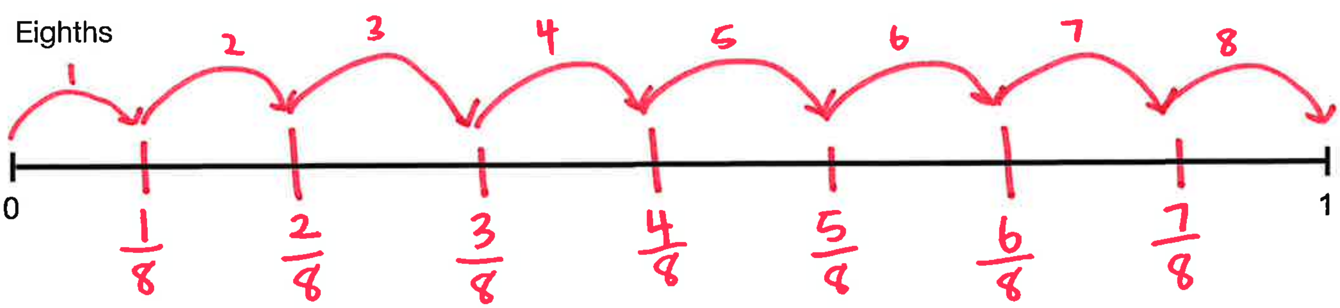


Directions: Create a number line using the fractional units given and label the dashes between **0** and **1**.

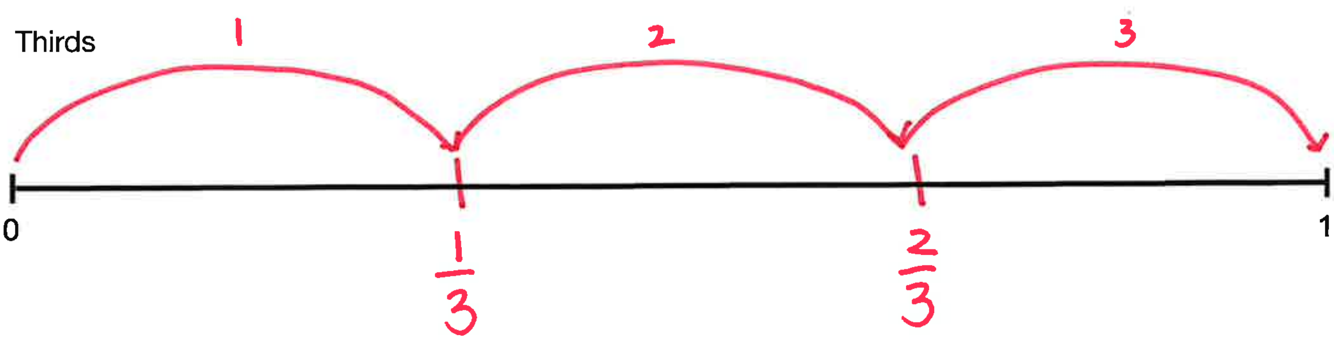
5. Halves



6. Eighths



7. Thirds



G3 U4 Lesson 5

Represent parts of one whole using number bonds

G3 U4 Lesson 5 - Students will represent parts of one whole using number bonds

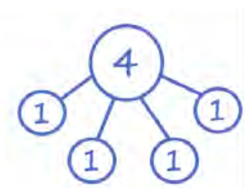
Warm Welcome (Slide 1): Tutor choice.

Frame the Learning/Connect to Prior Learning (Slide 2): Today we're moving from showing fractions with bars and number lines to showing fractions with a number bond! This isn't going to change anything we know about fractions - we still think of each part as equal sized pieces. The numerator still tells us the number of pieces we're working with and the denominator still tells us the total number of pieces in our whole. The only thing that will change is how we represent it!

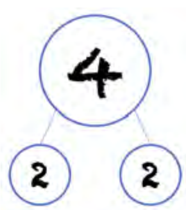
Let's Talk (Slide 3): Before we start, let's do a quick review. How many fourths are there in one whole? How do you know? Possible Student Answers, Key Points:

- There are 4 fourths in one whole because fourths tells me that the whole is divided into four parts.
- The unit name "fourths" tells me that there are four pieces in one whole. If I have a Snickers bar cut into fourths, then I have four pieces of one Snickers bar.

Let's Think (Slide 4): In the past few lessons, we've practiced representing fractions with bar models and number lines. Each way we represent one whole still shows us that there are four total pieces in a whole. Today, when we practice using number bonds, we're still representing the pieces that can be found in one whole.
Touch your nose if you've ever used number bonds before. Well, number bonds are something we can use to represent all sorts of numbers and combinations of numbers. I use a number bond to help divide a whole into useful parts.

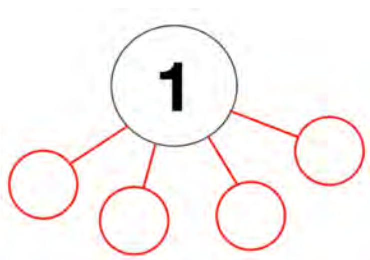


Let's think about how we can use a number bond to show how me and my three friends wanted to share my 4 Snickers bars, I can use my number bond to show how many Snickers bars each of us would get. I'm going to use the top circle to represent the whole, which is 4 Snickers bars. And then I can show the parts that make up the whole, to show that we each get 1 Snickers bar. So, now, my number bond shows that my **whole** is 4 and I'm taking 4 and dividing them into groups of one.



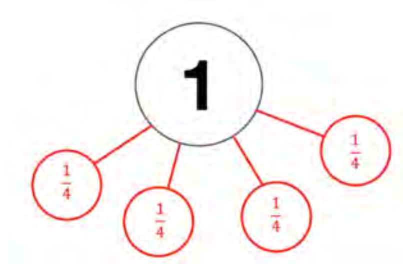
Or, if I want to split the 4 snickers between 2 people, each of us would get 2 Snickers each so I could use a number bond to show that 4 is the whole, and the two parts that make up 4 are 2 and 2.

Let's Think (Slide 5): But what if my whole is only **1**? What kind of number would I get if I take **one** whole and break it up into equal pieces? Fractions! So, let's say I only have **one** Snickers bar and I want to share it between me and my three friends. How many pieces will I need to divide my Snickers bar into? You will need to divide it into fourths because you're taking one whole and dividing it into 4 equal pieces.

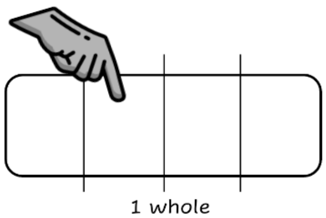


If I'm going to break my whole into 4 pieces, then I need to draw 4 lines to show that I'm dividing my whole into 4 parts. What will be the size of each piece once I divide it into four pieces? And, how would I represent that as a number? Possible Student Answers, Key Points:

- *The size of each piece will be one-fourth of the Snickers bar.*
- *You can represent it as* $\frac{1}{4}$.



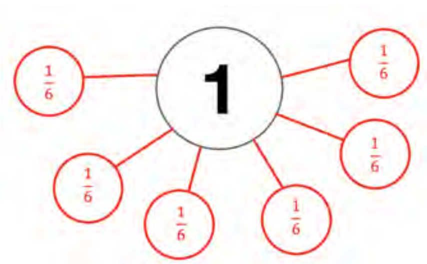
Now I'm going to write ¼ in each of the circles to show what the whole is split into. This 1 whole is split into 4 fourths, ¼ and ¼ and ¼ and ¼. Here, I see that there are 4 ¼s that make up 1 whole.



Now, let me make sure that the number bond is correct by checking my work with a bar model. I'm going to start with 1 whole and cut it into fourths, or four equal pieces. Each of these pieces is ¼ of the whole (*point and name*), so the whole is split into four equal-sized pieces which are each called ¼.

Let's Think (Slide 6): Let's try another one together. It says, "Divide the whole into sixths" Hmm, **how would you use your number bond to do this?** Possible Student Answers, Key Points:

- I will draw six lines and circles coming out of the top circle because sixths means six pieces.
- Each circle represents one of the six pieces, so the fraction is $\frac{1}{6}$ in each circle.



That's right, we're starting with 1 whole and we're cutting it into six equal-sized pieces, or sixths. So we can show that we cut 1 whole into sixths. That means that we have six ⅙ that make up 1 whole. And, if we're confused, we can always go back to a bar model to help us represent fractions with number bonds.

Let's Try it (Slides 7-8): So, today as we practice, remember that a number bond is not so different from a fraction bar or a number line. It's showing the same information just in a different way. The top circle tells us what our **whole** is and the circles coming out of it tell us the pieces that make up the whole.

WARM WELCOME

Today we will represent parts of one whole using number bonds.

Let's Talk:

How many fourths are in one whole?

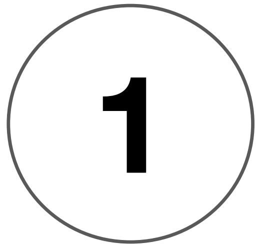
Let's Think:

Have you ever used number bonds before?

Let's use a number bond to show how I can split 4 Snickers with 4 people.

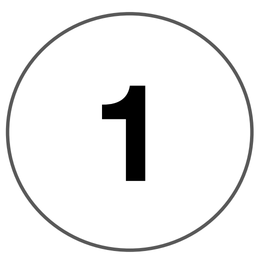
Let's Think:

Divide the whole into fourths.

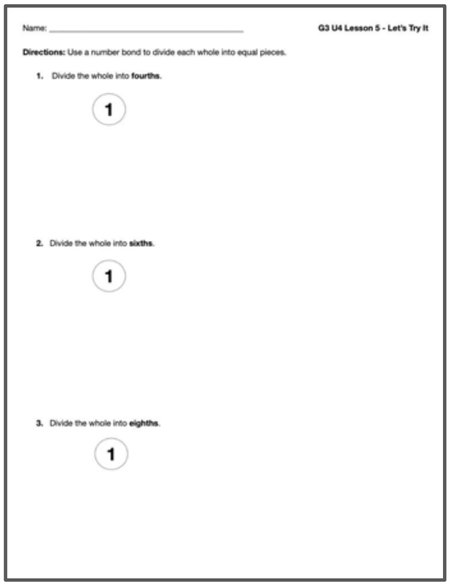


Let's Think:

Divide the whole into sixths.



Let's Try It:


Name: ______________________ G3 U4 Lesson 5 - Let's Try It

Directions: Use a number bond to divide each whole into equal pieces.

1. Divide the whole into **fourths**.

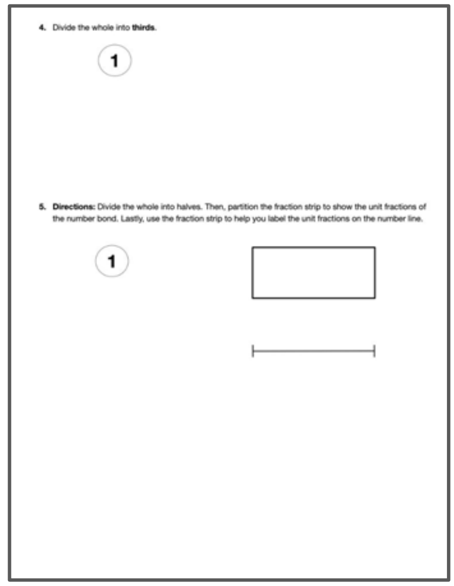
1

2. Divide the whole into **sixths**.

1

3. Divide the whole into **eighths**.

1

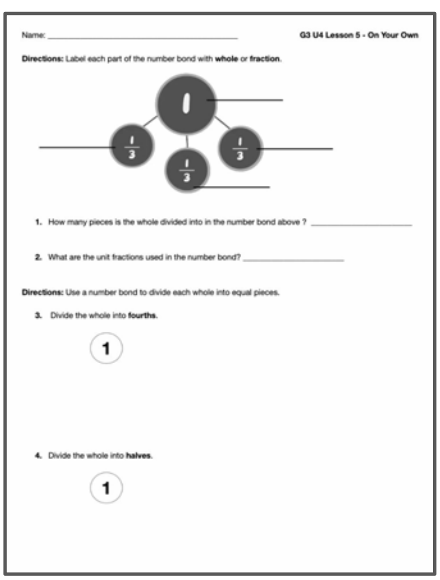

4. Divide the whole into **thirds**.

1

5. **Directions:** Divide the whole into halves. Then, partition the fraction strip to show the unit fractions of the number bond. Lastly, use the fraction strip to help you label the unit fractions on the number line.

1

On your Own:


Name: ______________________ G3 U4 Lesson 5 - On Your Own

Directions: Label each part of the number bond with **whole** or **fraction**.

1, 1/3, 1/3, 1/3

1. How many pieces is the whole divided into in the number bond above ? ____________

2. What are the unit fractions used in the number bond? ____________

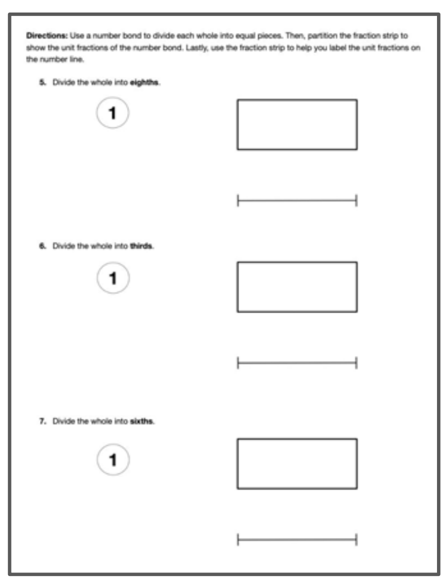
Directions: Use a number bond to divide each whole into equal pieces.

3. Divide the whole into **fourths**.

1

4. Divide the whole into **halves**.

1


Directions: Use a number bond to divide each whole into equal pieces. Then, partition the fraction strip to show the unit fractions of the number bond. Lastly, use the fraction strip to help you label the unit fractions on the number line.

5. Divide the whole into **eighths**.

1

6. Divide the whole into **thirds**.

1

7. Divide the whole into **sixths**.

1

Name: ____

Directions: Use a number bond to divide each whole into equal pieces.

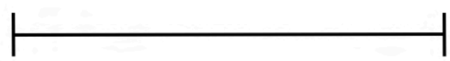
1. Divide the whole into **fourths**.

2. Divide the whole into **sixths**.

3. Divide the whole into **eighths**.

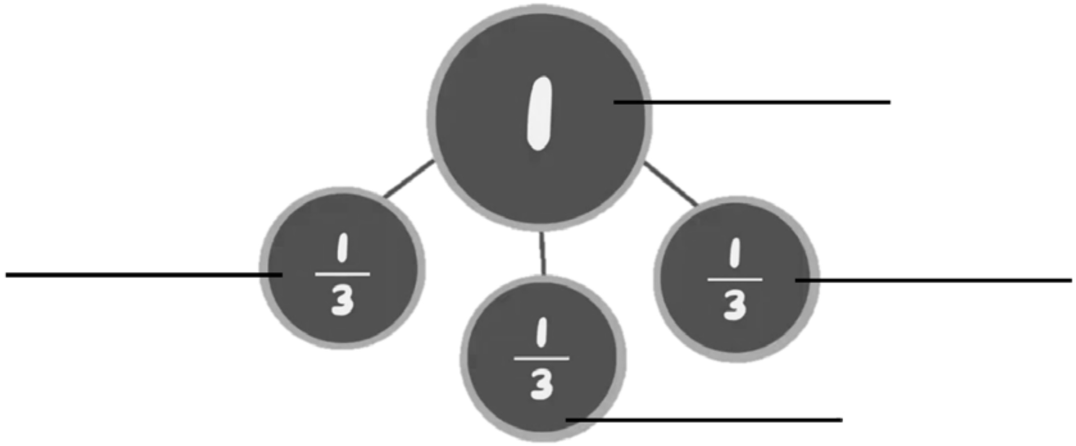
4. Divide the whole into **thirds**.

5. **Directions:** Divide the whole into halves. Then, partition the fraction strip to show the unit fractions of the number bond. Lastly, use the fraction strip to help you label the fractions on the number line.



Name: ____ **G3 U4 Lesson 5 - Independent Work**

Directions: Label each part of the number bond with **whole** or **fraction**.



1. How many pieces is the whole divided into in the number bond above ? ________________________

2. What are the unit fractions used in the number bond? ________________________

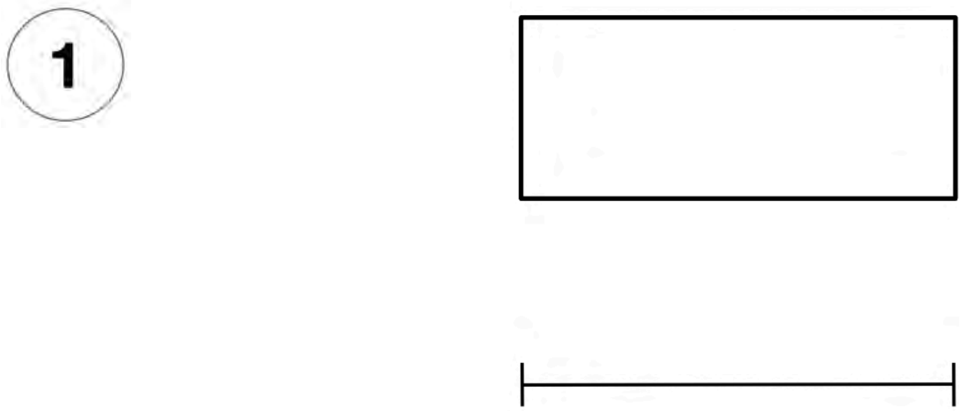
Directions: Use a number bond to divide each whole into equal pieces.

3. Divide the whole into **fourths**.

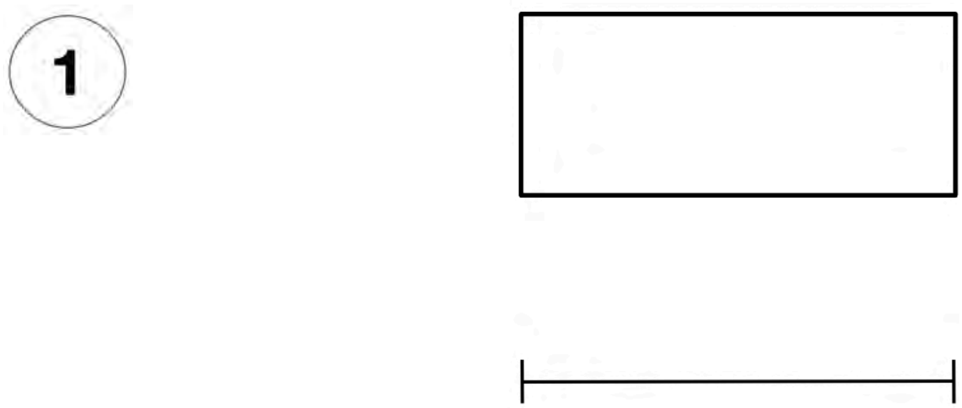
4. Divide the whole into **halves**.

Directions: Use a number bond to divide each whole into equal pieces. Then, partition the fraction strip to show the unit fractions of the number bond. Lastly, use the fraction strip to help you label the fractions on the number line.

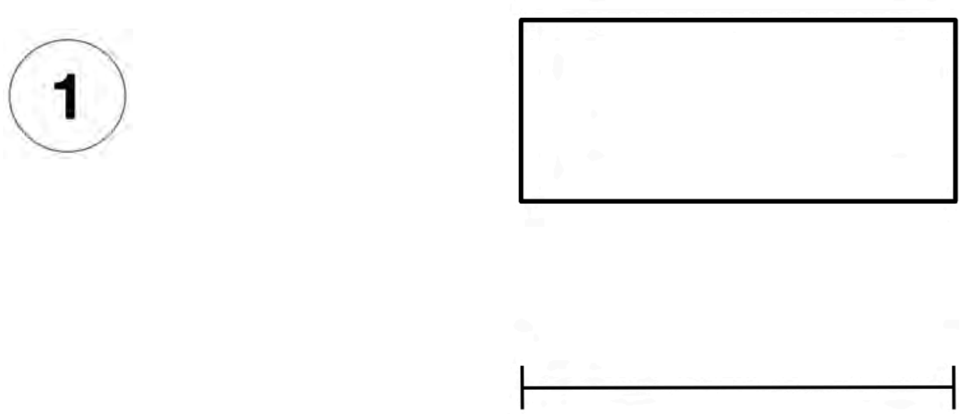
5. Divide the whole into **eighths**.



6. Divide the whole into **thirds**.



7. Divide the whole into **sixths**.

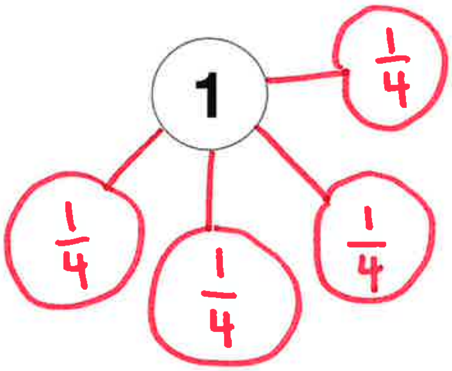


Name: ANSWER KEY

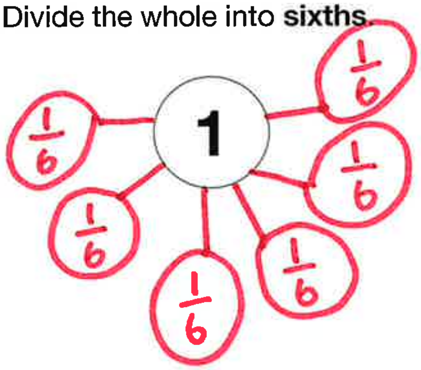
G3 U4 Lesson 5 - Let's Try It

Directions: Use a number bond to divide each whole into equal pieces.

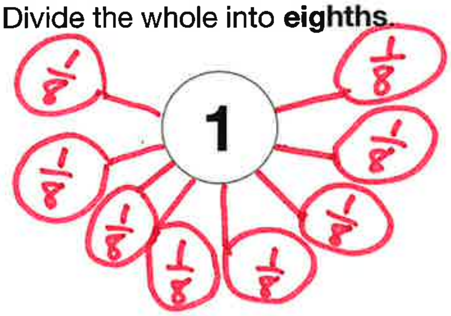
1. Divide the whole into **fourths.**



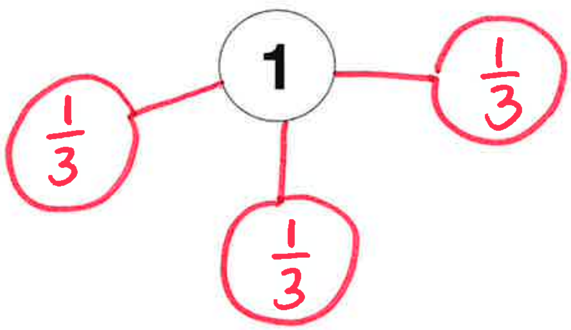
2. Divide the whole into **sixths.**



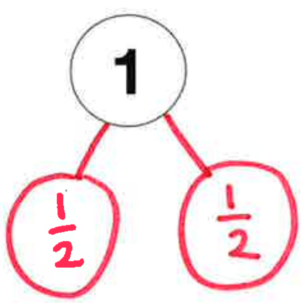
3. Divide the whole into **eighths.**

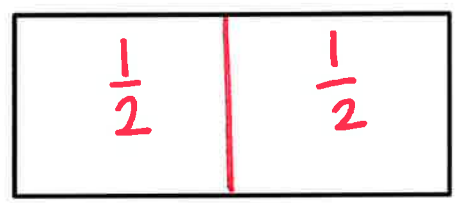


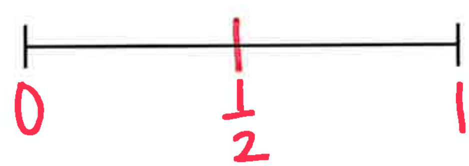
4. Divide the whole into **thirds**.



5. **Directions:** Divide the whole into halves. Then, partition the fraction strip to show the unit fractions of the number bond. Lastly, use the fraction strip to help you label the unit fractions on the number line.

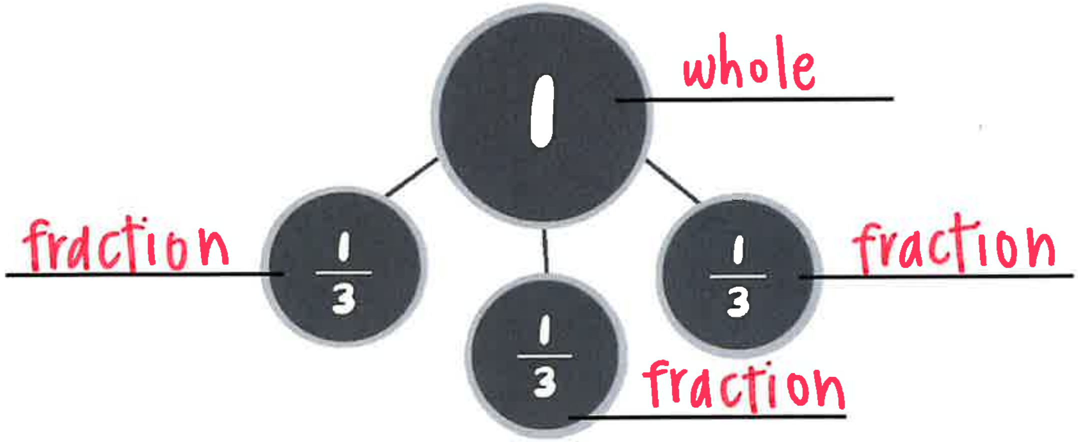






Name: ANSWER KEY

Directions: Label each part of the number bond with **whole** or **fraction**.

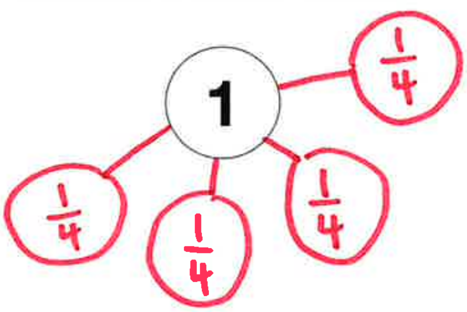


1. How many pieces is the whole divided into in the number bond above ? three pieces

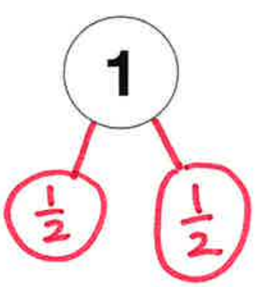
2. What are the unit fractions used in the number bond? $\frac{1}{3}$

Directions: Use a number bond to divide each whole into equal pieces.

3. Divide the whole into **fourths**.

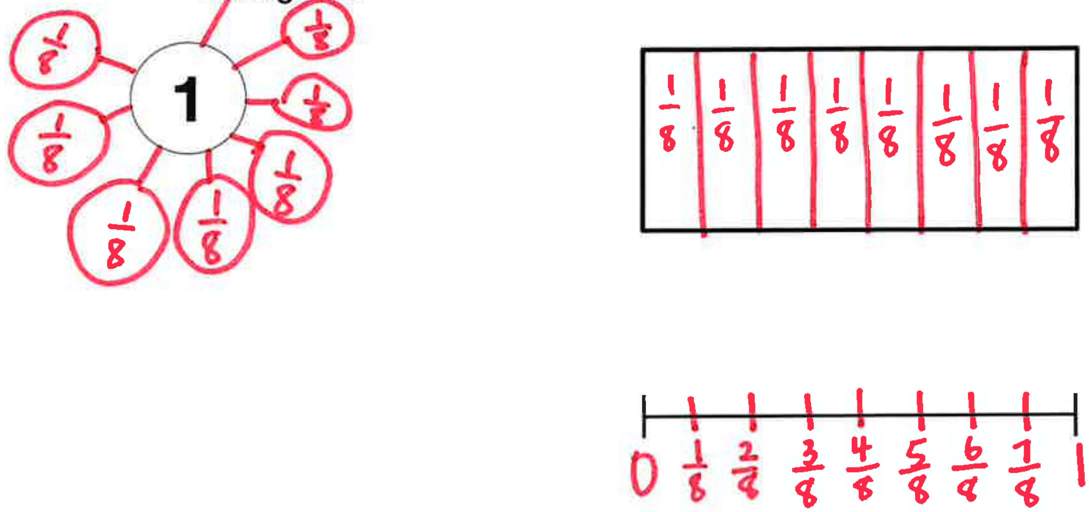


4. Divide the whole into **halves**.

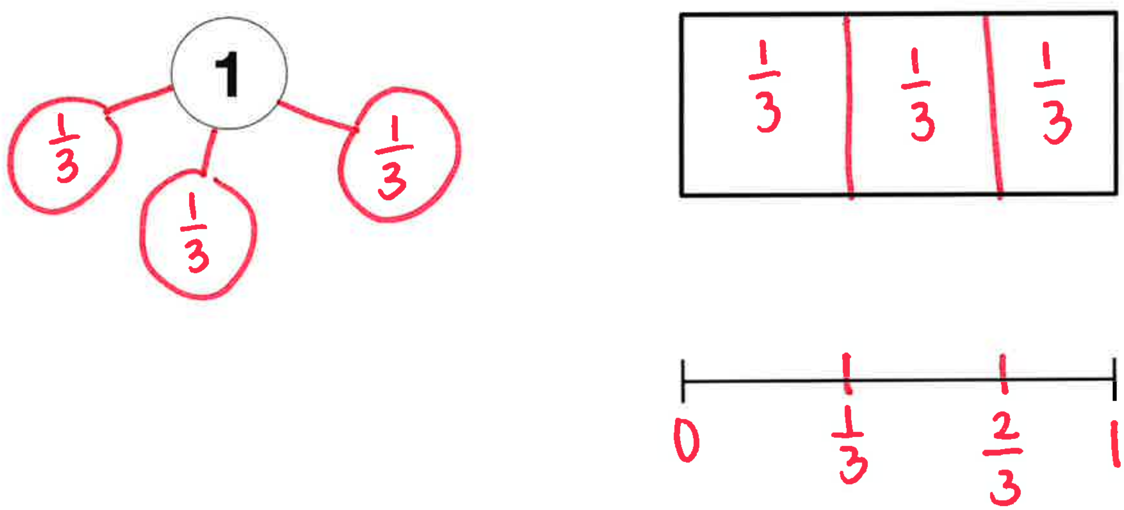


Directions: Use a number bond to divide each whole into equal pieces. Then, partition the fraction strip to show the unit fractions of the number bond. Lastly, use the fraction strip to help you label the ~~unit~~ fractions on the number line.

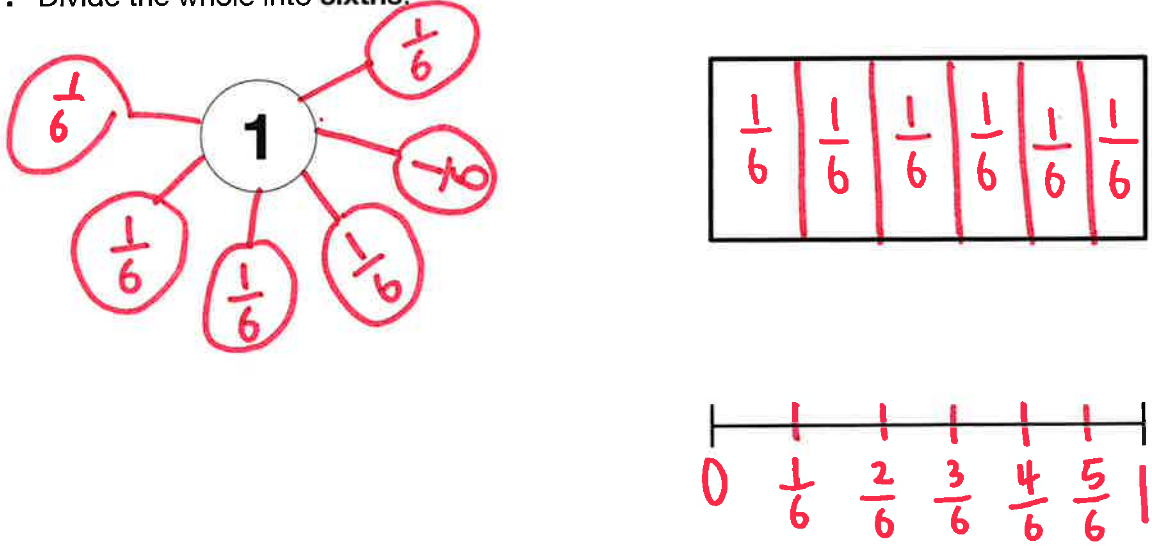
5. Divide the whole into **eighths**.



6. Divide the whole into **thirds**.



7. Divide the whole into **sixths**.



G3 U4 Lesson 6

Solve fraction story problems

CITYTUTOR DC

G3 U4 Lesson 6 - Students will solve fraction story problems

Warm Welcome (Slide 1): Tutor choice.

Frame the Learning/Connect to Prior Learning (Slide 2): The last five lessons have all been about understanding fractions - what they are and what strategies we can use to show fraction units. Today, we're going to take up a notch and start solving problems that involve fractions. We'll read a story problem and then figure out what strategy we can use to solve it!

Let's Talk (Slide 3): We've used Snickers bars as an example of something we would need to divide into fractional units. But there are a LOT of things people divide into fractional units when they're sharing with people. Like, pizza! **When have you had to take one whole pizza and share it in fractional pieces with people? What other whole items have you shared in fractional units?**

Let's Think (Slide 4): Let's look at this story problem. Listen as I read it, "Malik baked a pie with his grandmother for Thanksgiving. They divided the pie into eight slices. Before dinner, Malik's cousins ate two slices. What fraction of the pie is left for the rest of the family?"

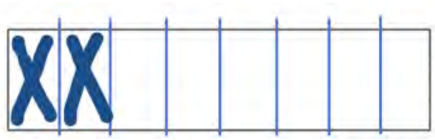
So, our job now is to think about what strategy we could use to solve this problem. Before we solve, let's review the three strategies we've learned about. What strategies have we used to show our work with fractions? Possible Student Answers, Key Points:

- We've used fraction strips/bars to draw out a whole and break it into equal pieces.
- We've used number lines to divide a whole into equal parts.
- We've used a number bond to show a whole and then how many pieces are in it when we divide it equally.

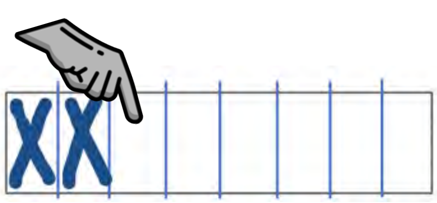
Let me think. What would be the best strategy to use for this problem? I could use a fraction strip to draw out the pieces of the pie and see what's left. I know pies are round, but it's easier to draw a rectangle and I can split a rectangle into equal pieces better than a circle. So, I'm going to work with a rectangle for now.

Okay, this is one whole pie. Now, let's read the problem again to figure out what we need to do next.

It tells me that Malik divided the pie into eight slices, so I'm going to divide my fraction strip into 8. Now that I have 8 slices of the pie, I'm going to look back at the problem to make sure I have all the right information.



(Read the problem aloud again) So, his cousins ate 2 of the slices. I'm going to **X** out **two** of my pieces to show that they're eaten, or gone!



The problem wants to know how much pie is left for the rest of the family. Let me count my remaining pieces. So, I have 6 slices of pie left! The question asks, "What **fraction** of the pie is left…," so I will give my answer in fraction form. Well, 6 is the number of slices Malik has left and the **whole** pie was 8 slices, so there were 6 out of 8 slices left.

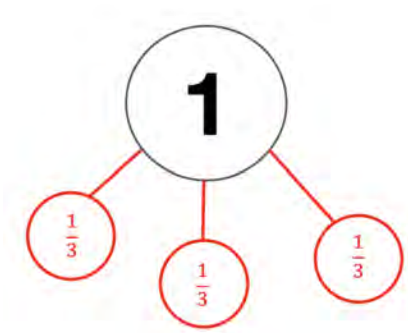
The fraction is $\frac{6}{8}$. My final answer is $\frac{6}{8}$ of the pie is left! When I'm answering story problems, I need to make sure I use the right units to describe my fraction. Here I'm talking about **pie** so I need to make sure my answer includes that pie!

Let's Think (Slide 5): Ok, now you're going to try. Let's read the problem aloud first. So, what's our first step? Pick a strategy! What makes the most sense to use here - a fraction strip, a number line, or a number bond?

Note: *If students are unsure, encourage them to use a number bond here. Number lines are usually better used for distances, time, and fractions greater than a whole - although students don't need to know that at this point. But all strategies will work for this problem.)*

Now, let's draw out our fraction strip/number bond. Go back and re-read the problem to make sure you know what you're doing with the whole.

Ok, so what's our next step? Makinzie is sharing the cupcake with three people, so I need to divide the whole into three pieces.



Let's look back at the problem once more. Have you shown the work correctly? What answer does the question need?

Right! The question is asking what unit fraction would each girl get? They would each get ⅓ *of the cupcake*! Don't forget to add on the units that describe our fraction. Here we're talking about units of cupcake!

Let's Try it (Slides 6-7): So, today as we practice, remember that it's important to read through a story problem to understand what strategy would help you best solve the problem. We've learned about three strategies to help us think about fractions - drawing fraction bars/strips, number lines, and number bonds. And lastly, once you've found your answer don't forget to include the unit that describes your fraction - it might be cupcakes, pizzas, pies, whatever!

WARM WELCOME

Today we will solve fraction story problems.

Let's Talk:

When have you had to take one **whole** pizza and share it in fractional pieces with people?

What other **whole** items have you shared in fractional units?

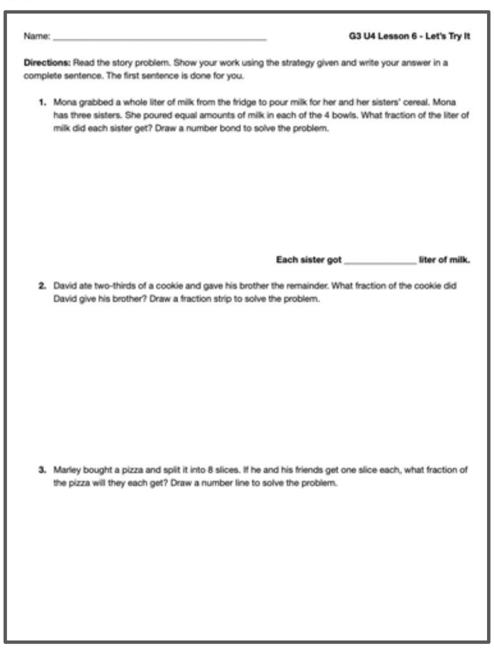
Let's Think:

Malik baked a pie with his grandmother for Thanksgiving. They divided the pie into eight slices. Before dinner, Malik's cousins ate two slices. What fraction of the pie is left for the rest of the family?

Let's Think:

Makinzie brought a cupcake home from a birthday party. She wanted to share it with her two little sisters. What fraction of the cupcake would each sister get if Makinzie made sure to give her and her sister equal pieces?

Let's Try It:



Name: ______________________ **G3 U4 Lesson 6 - Let's Try It**

Directions: Read the story problem. Show your work using the strategy given and write your answer in a complete sentence. The first sentence is done for you.

1. Mona grabbed a whole liter of milk from the fridge to pour milk for her and her sisters' cereal. Mona has three sisters. She poured equal amounts of milk in each of the 4 bowls. What fraction of the liter of milk did each sister get? Draw a number bond to solve the problem.

Each sister got ____________ liter of milk.

2. David ate two-thirds of a cookie and gave his brother the remainder. What fraction of the cookie did David give his brother? Draw a fraction strip to solve the problem.

3. Marley bought a pizza and split it into 8 slices. If he and his friends get one slice each, what fraction of the pizza will they each get? Draw a number line to solve the problem.

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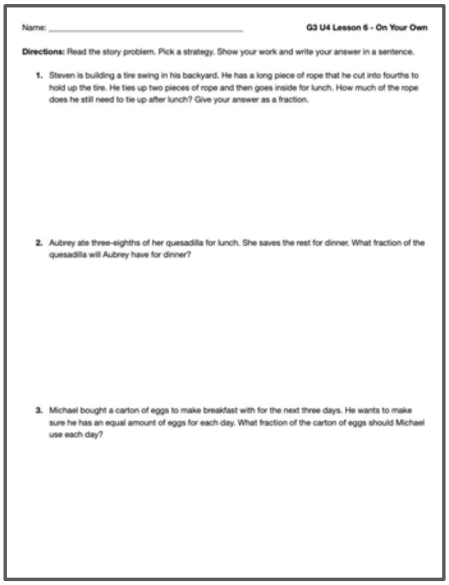
On your Own:



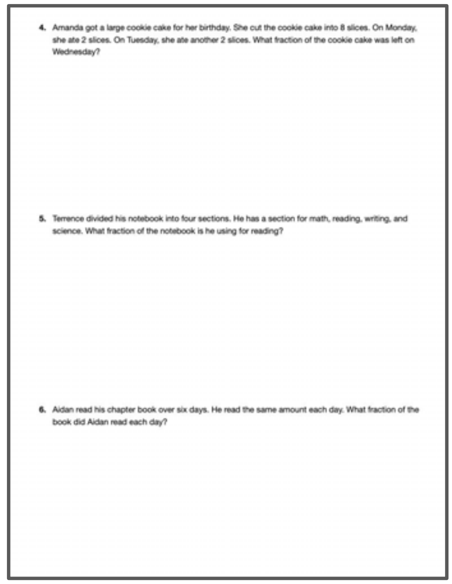
Name: ______________________ **G3 U4 Lesson 6 - On Your Own**

Directions: Read the story problem. Pick a strategy. Show your work and write your answer in a sentence.

1. Steven is building a tire swing in his backyard. He has a long piece of rope that he cut into fourths to hold up the tire. He ties up two pieces of rope and then goes inside for lunch. How much of the rope does he still need to tie up after lunch? Give your answer as a fraction.

2. Aubrey ate three-eighths of her quesadilla for lunch. She saves the rest for dinner. What fraction of the quesadilla will Aubrey have for dinner?

3. Michael bought a carton of eggs to make breakfast with for the next three days. He wants to make sure he has an equal amount of eggs for each day. What fraction of the carton of eggs should Michael use each day?



4. Amanda got a large cookie cake for her birthday. She cut the cookie cake into 8 slices. On Monday, she ate 2 slices. On Tuesday, she ate another 2 slices. What fraction of the cookie cake was left on Wednesday?

5. Terrence divided his notebook into four sections. He has a section for math, reading, writing, and science. What fraction of the notebook is he using for reading?

6. Aidan read his chapter book over six days. He read the same amount each day. What fraction of the book did Aidan read each day?

Name: ____ G3 U4 Lesson 6 - Let's Try It

Directions: Read the story problem. Show your work using the strategy given and write your answer in a complete sentence. The first sentence is done for you.

1. Mona grabbed a whole liter of milk from the fridge to pour milk for her and her sisters' cereal. Mona has three sisters. She poured equal amounts of milk in each of the 4 bowls. What fraction of the liter of milk did each sister get? Draw a number bond to solve the problem.

Each sister got _______________ liter of milk.

2. David ate two-thirds of a cookie and gave his brother the remainder. What fraction of the cookie did David give his brother? Draw a fraction strip to solve the problem.

3. Marley bought a pizza and split it into 8 slices. If he and his friends get one slice each, what fraction of the pizza will they each get? Draw a number line to solve the problem.

Directions: Read the story problem. Pick a strategy. Show your work and write your answer in a sentence.

1. Steven is building a tire swing in his backyard. He has a long piece of rope that he cut into fourths to hold up the tire. He ties up two pieces of rope and then goes inside for lunch. How much of the rope does he still need to tie up after lunch? Give your answer as a fraction.

2. Aubrey ate three-eighths of her quesadilla for lunch. She saves the rest for dinner. What fraction of the quesadilla will Aubrey have for dinner?

3. Michael bought a carton of eggs to make breakfast with for the next three days. He wants to make sure he has an equal amount of eggs for each day. What fraction of the carton of eggs should Michael use each day?

4. Amanda got a large cookie cake for her birthday. She cut the cookie cake into 8 slices. On Monday, she ate 2 slices. On Tuesday, she ate another 2 slices. What fraction of the cookie cake was left on Wednesday?

5. Terrence divided his notebook into four sections. He has a section for math, reading, writing, and science. What fraction of the notebook is he using for reading?

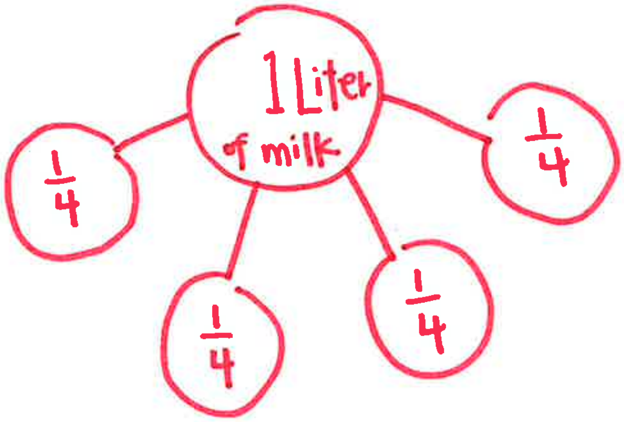
6. Aidan read his chapter book over six days. He read the same amount each day. What fraction of the book did Aidan read each day?

Name: ANSWER KEY

G3 U4 Lesson 6 - Let's Try It

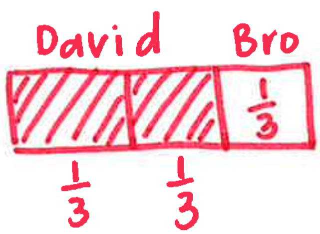
Directions: Read the story problem. Show your work using the strategy given and write your answer in a complete sentence. The first sentence is done for you.

1. Mona grabbed a whole liter of milk from the fridge to pour milk for her and her sisters' cereal. Mona has three sisters. She poured equal amounts of milk in each of the 4 bowls. What fraction of the liter of milk did each sister get? Draw a number bond to solve the problem.



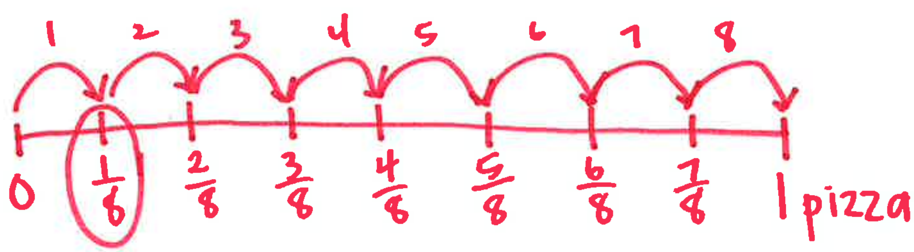
Each sister got $\frac{1}{4}$ **liter of milk.**

2. David ate two-thirds of a cookie and gave his brother the remainder. What fraction of the cookie did David give his brother? Draw a fraction strip to solve the problem.



David gave his brother $\frac{1}{3}$ of the cookie.

3. Marley bought a pizza and split it into 8 slices. If he and his friends get one slice each, what fraction of the pizza will they each get? Draw a number line to solve the problem.



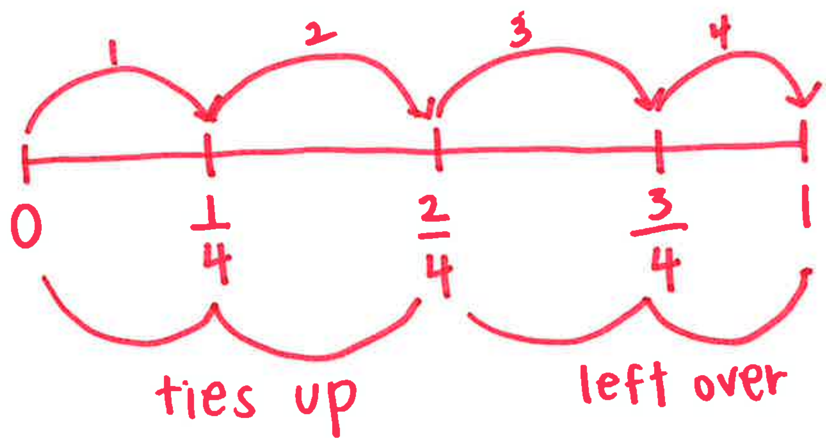
Marley and his friends get $\frac{1}{8}$ slice of pizza each.

Name: ANSWER KEY

G3 U4 Lesson 6 - Independent Practice

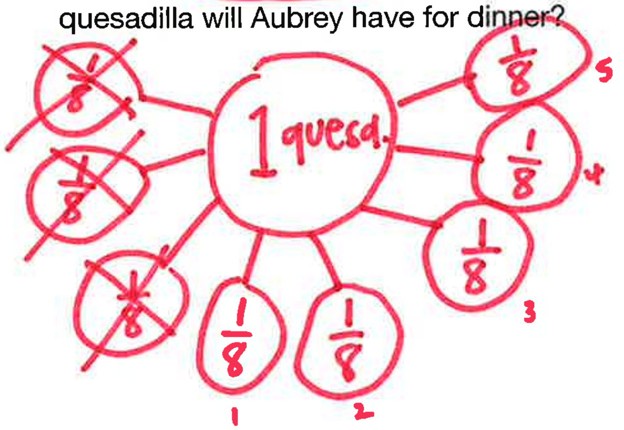
Directions: Read the story problem. Pick a strategy. Show your work and write your answer in a sentence.

1. Steven is building a tire swing in his backyard. He has a long piece of rope that he cut into fourths to hold up the tire. He ties up two pieces of rope and then goes inside for lunch. How much of the rope does he still need to tie up after lunch? Give your answer as a fraction.



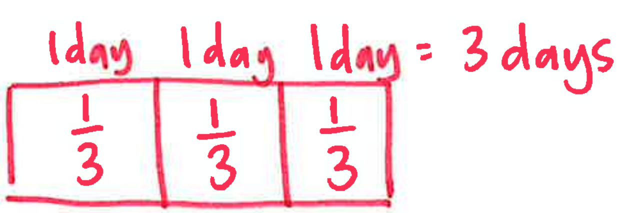
He still has $\frac{2}{4}$ of rope to still tie up.

2. Aubrey ate three-eighths of her quesadilla for lunch. She saves the rest for dinner. What fraction of the quesadilla will Aubrey have for dinner?



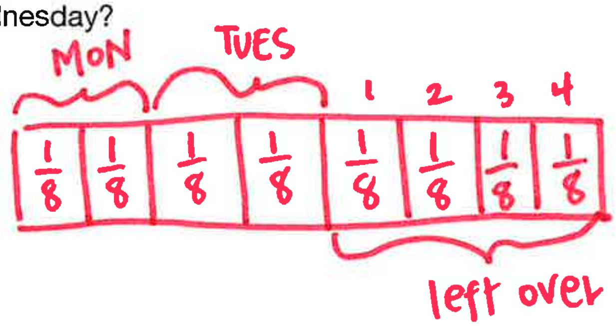
Aubrey has $\frac{5}{8}$ of the quesadilla for dinner.

3. Michael bought a carton of eggs to make breakfast with for the next three days. He wants to make sure he has an equal amount of eggs for each day. What fraction of the carton of eggs should Michael use each day?



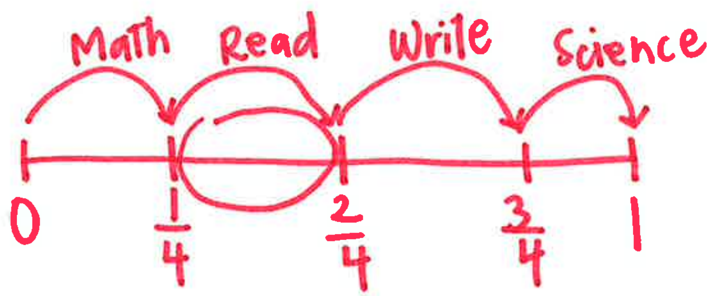
Michael should use $\frac{1}{3}$ of the carton each day.

4. Amanda got a large cookie cake for her birthday. She cut the cookie cake into 8 slices. On Monday, she ate 2 slices. On Tuesday, she ate another 2 slices. What fraction of the cookie cake was left on Wednesday?



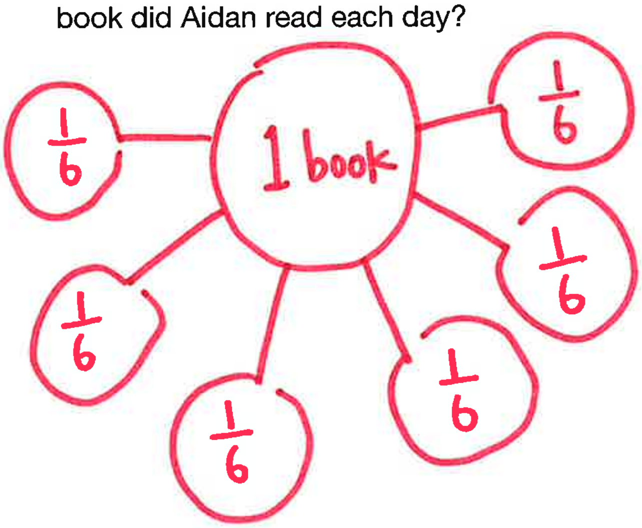
Amanda has $\frac{4}{8}$ of the cookie left.

5. Terrence divided his notebook into four sections. He has a section for math, reading, writing, and science. What fraction of the notebook is he using for reading?



Terrence is using $\frac{1}{4}$ of the notebook for reading.

6. Aidan read his chapter book over six days. He read the same amount each day. What fraction of the book did Aidan read each day?



Aidan read $\frac{1}{6}$ of his chapter book each day.

G3 U4 Lesson 7

Compare unit fractions by reasoning about their size

G3 U4 Lesson 7 - Students will compare unit fractions by reasoning about their size

Warm Welcome (Slide 1): Tutor choice.

Frame the Learning/Connect to Prior Learning (Slide 2): You all have become such experts at drawing fractions! Today, your expert drawing skills will be used to *compare* fractions! Thinking about our numerator and denominator, **how might we compare fractions? What does it mean to compare something?**
Possible Student Answers, Key Points:

- We can see which fraction is bigger or smaller.
- We can use pictures to help us compare.
- Comparing means to find if one thing is bigger/smaller/the same as something else.
- We can use symbols to help us compare.

Let's Talk (Slide 3): You're right, when we're comparing something we're figuring out whether one thing is more or less or the exact same as something else. So let's think about pizza. Imagine that I am buying you your favorite pizza for lunch, **would you like ¼ or ½ of it? Why?** Possible Student Answers, Key Points:

- I would choose ½ because that's a larger part of the pizza than ¼.
- I want ½ of the pizza because ½ means the pizza is only cut into two slices, but ¼ means the pizza is cut into four slices. If I only get one of the four slices, I'll have a smaller slice than ½ of a pizza.

Note: Students may not provide these answers - that's fine! That's the whole point of the lesson! If they share wrong answers or can't provide reasoning for the right answer, move on to the next slide!

Let's Talk (Slide 4): Take a look at these two pizzas. One is cut into fourths and one is cut into halves. It's important to note that the two whole pizzas are the exact same size. We're not comparing half of a teeny pizza to a fourth of a HUGE pizza. **We can only compare fractions if they're coming from EQUAL sized wholes. Why do you think that is**? Possible Student Answers, Key Points:

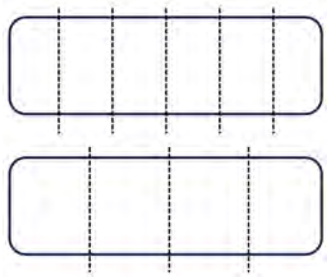
- They have to both be the same size because if one pizza is bigger then the size of its pieces will be bigger. If they're the same size, you know that the size of the slices can be compared to each other.
- If one pizza is smaller than the other then their slices will be smaller even if they're only cut into halves.

So, which pizza has the larger slices? ½! Even though 4 is a larger **whole** number, when it's the denominator in a fraction it means the parts in a whole. The more parts, the smaller the pieces! Why does that make sense? Possible Student Answers, Key Points:

- If you keep cutting something the pieces will become smaller. Like if I cut a piece of paper again and again the pieces of paper will get tiny - like confetti!
- The denominator tells you how many people you're sharing with and if you're sharing with 2 people, then you get a bigger piece, but if you're sharing with 4 people you'll get a smaller piece.

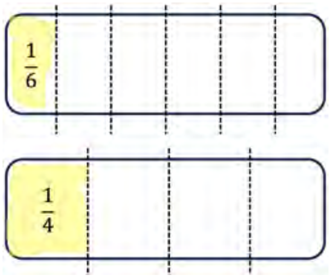
Let's Think (Slide 5): Let's look at these two fractions - we have $\frac{1}{6}$ and $\frac{1}{4}$ and I want to compare them. Hmm, with fractions I have to be careful to really think about what I'm comparing. So, I want to figure out whether ⅙ is bigger, smaller, or the same as ¼.

I'm going to start with two separate whole pieces to help me compare the sizes, remember the wholes have to be the exact same size to help me compare.



Now, let me start with ⅙. The denominator is 6 so that means that I am cutting the whole into 6 equal-sized pieces/

And, I am comparing ⅙ to ¼. The denominator is 4 so let me cut the bottom whole into fourths, or four equal-sized pieces.



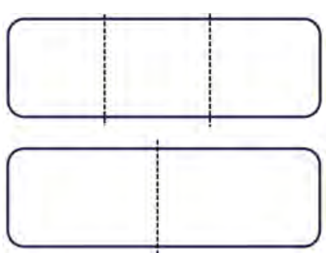
Now, let me shade in the fraction. I see ⅙, which means I have 1 out of 6 pieces, I'll shade that in and label it as ⅙.

And I am comparing ⅙ to ¼. So, I also only have ONE piece, which means I have 1 out of 4 pieces, I'll shade that in and label it as ¼.

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

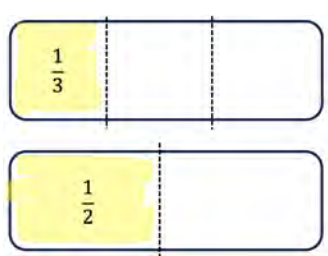
When I look at my models, it helps me compare! If I'm comparing ⅙ to ¼, I know that ⅙ is **less than** ¼. So, I would use my **less than** symbol for my comparison. This makes sense because I had to cut the top model more times, like I had to do with my pizza earlier! The more cuts I make, the smaller the pieces get!

Let's Think (Slide 6): Now, let's think through another comparison. We're comparing ⅓ to ½. Some of you have gotten so good at fractions that I think you already know which is bigger but let's draw a model to prove it.   Again, we're going to start with two separate wholes that are the exact same size.



It says that we're comparing ⅓ to ½. So we need to split the first whole into how many equal-sized pieces? 3! That's right, we're going to split it into thirds.

And, how many equal-sized pieces do we need to split the bottom whole into? 2! That's right, we're going to split it into halves.



Now both of the numerators are ONE, that means that we have one piece out of 3 and one piece out of 2, let's shade in and label one piece in each of the wholes in our fraction model.

So, looking at our two fractions and the size of pieces they represent, which is greater ⅓ or ½? ½! That's right, but remember, when we compare we have to read from left to right. So we'll say that ⅓ is less than ½ and use the less than symbol.

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

Let's write that comparison down!

Let's Try it (Slides 7): As we work today, remember that our denominator tells us the **size** of our pieces. Take time when you're comparing fractions to think about the differences between the two denominators you're given - when the wholes are EQUAL SIZES. The greater the denominator, the more pieces our whole is divided into - which means the size of the pieces are smaller.

WARM WELCOME

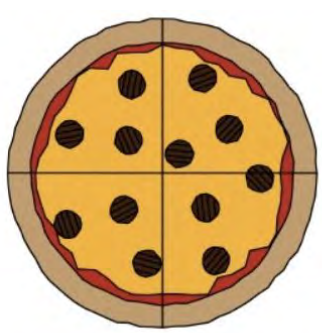
Today we will compare unit fractions by reasoning about their size.

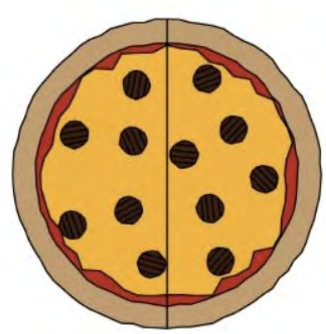
Let's Talk:

If I bought your favorite pizza for lunch, would you want ¼ of it or ½ it? Why?

Let's Talk:

If I bought your favorite pizza for lunch, would you want ¼ of it or ½ it?





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Let's Think:

Compare the two fractions.

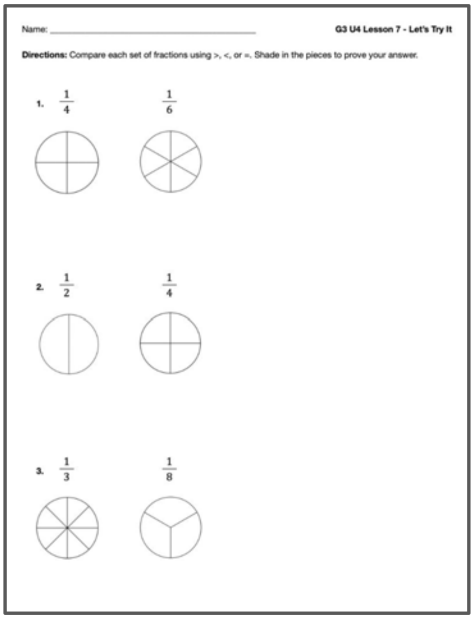
$$\frac{1}{6} \qquad \frac{1}{4}$$

Let's Think:

Compare the two fractions.

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

Let's Try It:

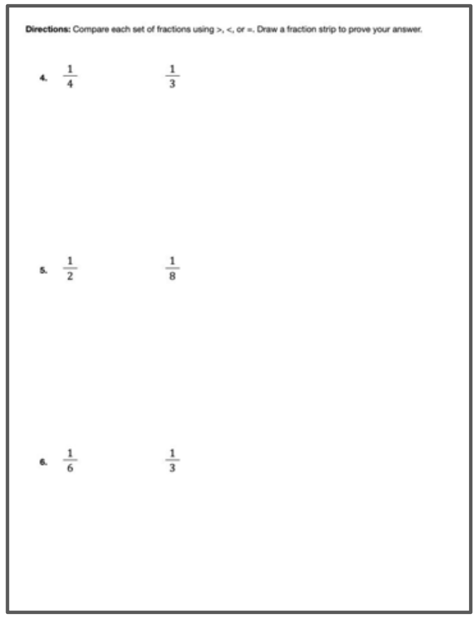

Name: ______________________ **G3 U4 Lesson 7 - Let's Try It**

Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

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

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

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

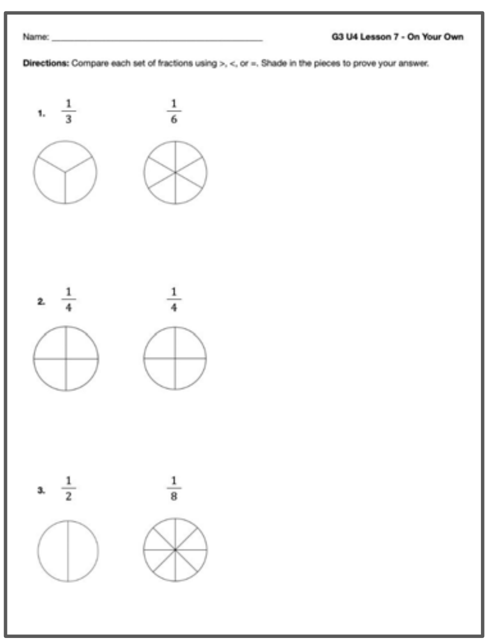

Directions: Compare each set of fractions using >, <, or =. Draw a fraction strip to prove your answer.

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

5. $\frac{1}{2}$ $\frac{1}{8}$

6. $\frac{1}{6}$ $\frac{1}{3}$

On your Own:

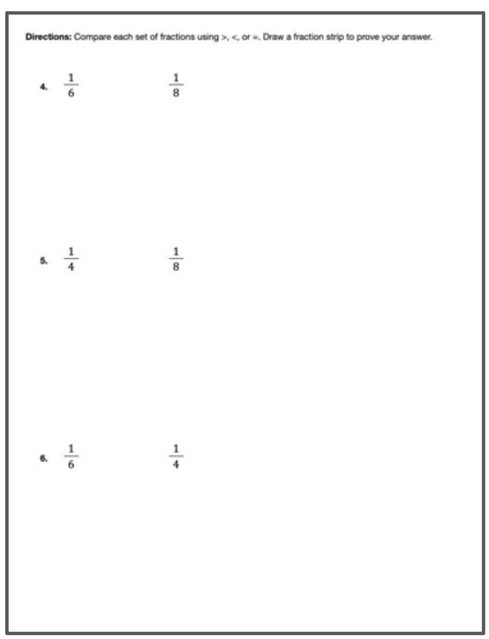

Name: ______________________ **G3 U4 Lesson 7 - On Your Own**

Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

1. $\frac{1}{3}$ $\frac{1}{6}$

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

3. $\frac{1}{2}$ $\frac{1}{8}$


Directions: Compare each set of fractions using >, <, or =. Draw a fraction strip to prove your answer.

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

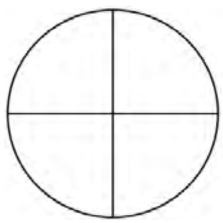
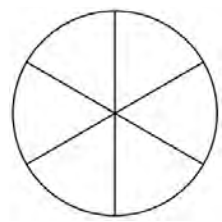
5. $\frac{1}{4}$ $\frac{1}{8}$

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

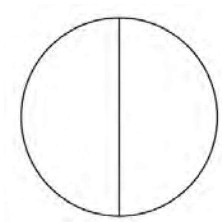
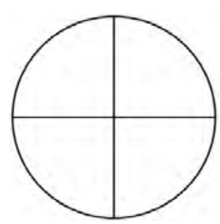
Name: ____

Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

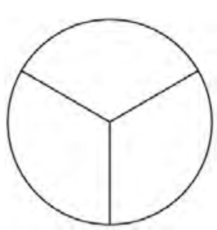
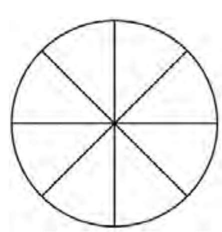
1. $\frac{1}{4}$ $\frac{1}{6}$

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

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

Directions: Compare each set of fractions using >, <, or =. Draw a fraction strip to prove your answer.

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

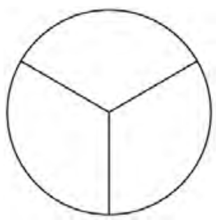
5. $\frac{1}{2}$ $\frac{1}{8}$

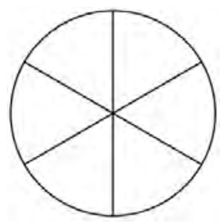
6. $\frac{1}{6}$ $\frac{1}{3}$

Name: ____ **G3 U4 Lesson 7 - Independent Work**

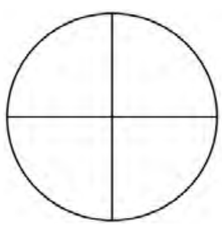
Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

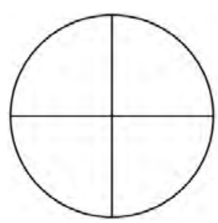
1. $\frac{1}{3}$ $\frac{1}{6}$



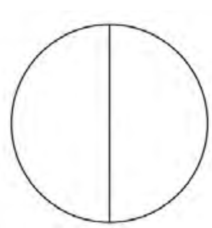


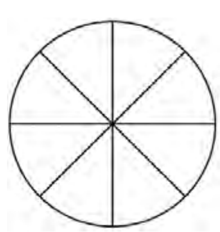
2. $\frac{1}{4}$ $\frac{1}{4}$





3. $\frac{1}{2}$ $\frac{1}{8}$





Directions: Compare each set of fractions using >, <, or =. Draw a fraction strip to prove your answer.

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

5. $\frac{1}{4}$ $\frac{1}{8}$

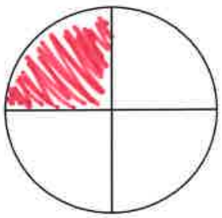
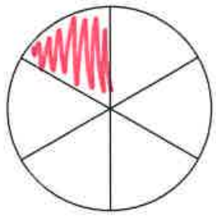
6. When comparing fractions, why do the wholes need to be equal sizes?

Name: ANSWER KEY

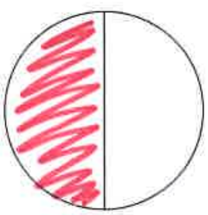
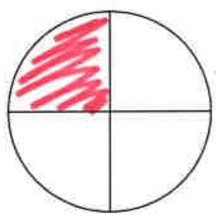
G3 U4 Lesson 7 - Let's Try It

Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

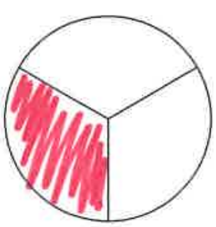
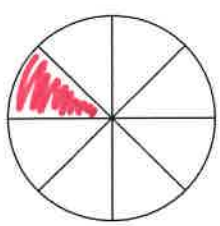
1. $\frac{1}{4}$ > $\frac{1}{6}$

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

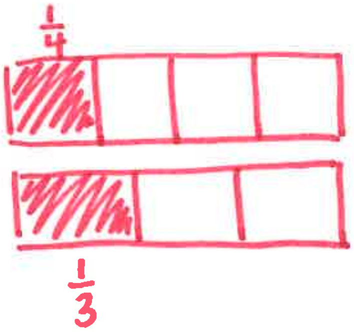
 

3. $\frac{1}{3}$ > $\frac{1}{8}$

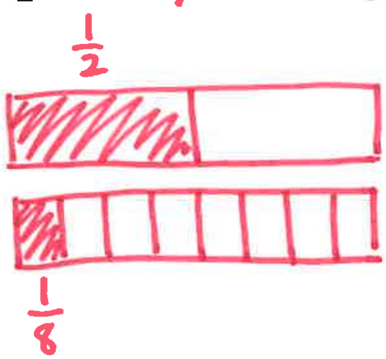
 

Directions: Compare each set of fractions using >, <, or =. Draw a fraction strip to prove your answer.

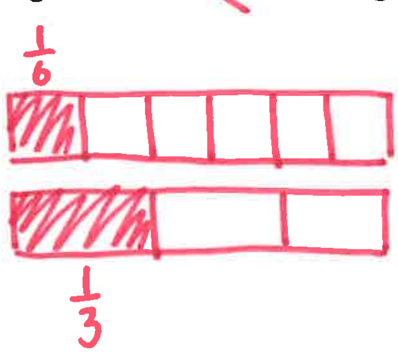
4. $\frac{1}{4}$ < $\frac{1}{3}$



5. $\frac{1}{2}$ > $\frac{1}{8}$



6. $\frac{1}{6}$ < $\frac{1}{3}$

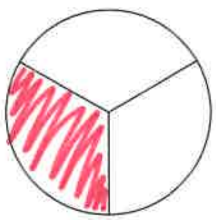
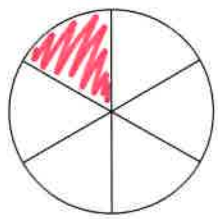


Name: ANSWER KEY

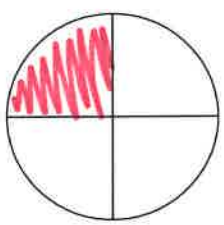
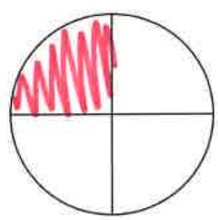
G3 U4 Lesson 7 - Independent Practice

Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

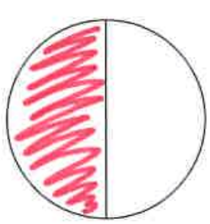
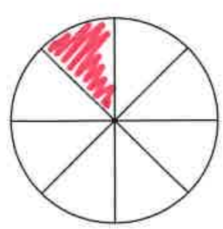
1. $\frac{1}{3}$ > $\frac{1}{6}$

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

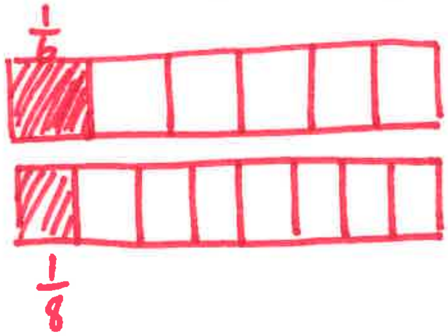



3. $\frac{1}{2}$ > $\frac{1}{8}$

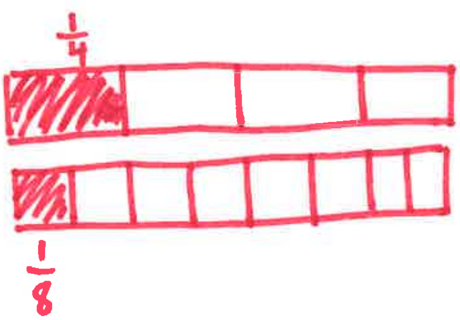



Directions: Compare each set of fractions using >, <, or =. Draw a fraction strip to prove your answer.

4. $\frac{1}{6}$ > $\frac{1}{8}$



5. $\frac{1}{4}$ > $\frac{1}{8}$



6. When comparing fractions, why do the wholes need to be equal sizes?

If the wholes are different sizes, then whichever whole is larger will have the larger size piece. It won't be an equal comparison.

G3 U4 Lesson 8

Compare unit fractions by using a number line

CITYTUTOR DC

G3 U4 Lesson 8 - Students will compare unit fractions by using number lines

Warm Welcome (Slide 1): Tutor choice.

Frame the Learning/Connect to Prior Learning (Slide 2): In the last lesson, we compared fractions by understanding how the denominator tells us the size of pieces. We used pizza slices to help us picture it. We drew equal sized wholes to compare pieces. Today, we're going to use number lines to compare fractions. We're still looking at the size of our pieces. We're just using a number line to help us picture it today.

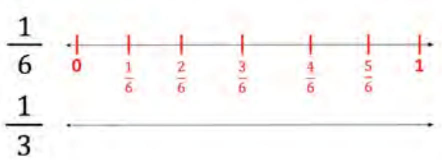
Let's Talk (Slide 3): This slide says, **Which is larger, ⅙ or ⅓? How do you know? If you don't know, how could you find out?** Possible Student Answers, Key Points:

- ⅓ is larger than ⅙ because ⅓ is only cut into 3 pieces, which means the pieces are cut less than sixths and so each piece will be larger than a sixth.
- ⅙ is smaller than ⅓ because it's cut into 6 parts, which is twice as many parts as ⅓, so the sizes are going to be half the size of a third.
- We could draw a model and compare the sizes!

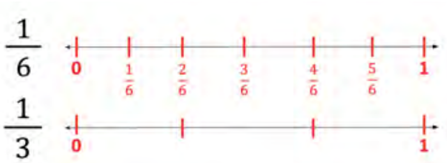
Some of you are thinking ⅓ is bigger, some of you aren't sure, and others think that make ⅙ is bigger. Let's use a number line to help us find out. Remember that creating a number line is not so different from drawing a bar model.

Let's Think (Slide 4): Notice even the number lines I draw are equal in length - in order to compare fractions, they **must** be equal sized wholes! Now, the first step is always to label our number line with 0 and 1.

Starting with ⅙, we divide a number line the same way we divide fraction strips. We see that 6 is the denominator so we'll split the number line into 6 parts. This can be hard so let's first divide it into 3 parts and then divide each third into two pieces to make sixths.

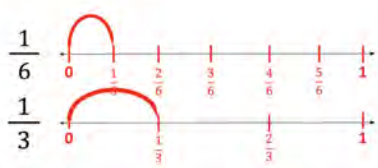


Now, we need to number each of our ticks. Count the fractions with me as I number them.

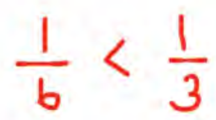


Now for ⅓, we need to split our whole into three equal-sized pieces.

Now, we number each of our ticks. Count the fractions with me as I number them… ⅓, ⅔.



Now, let's take a look at the size of our pieces. The numerator in both of our fractions is 1. So we want to see whether 1 out of 6 pieces is bigger or smaller than 1 out 3 pieces. Let's make a hop on our number line to see how much each piece is. Which is bigger? ⅓! That's right, ⅓ is greater or bigger than ⅙. We can clearly see that a third is a larger piece than a sixth.



Let's go back and read from left to right and fill in our symbol.

Nice work, did you see how comparing fractions on a number line was nearly the same as comparing fractions with models?

Let's Try it (Slides 5-6): As we work today, remember that our denominator tells us the **size** of our pieces. Take time when you're comparing fractions to think about the differences between the two denominators you're given. The greater the denominator, the more pieces our whole is divided into - which means the size of the pieces are smaller. Make an educated guess *before* you complete your number line to check your thinking. And make sure that your number lines need to be EQUAL sizes.

WARM WELCOME

Today we will compare unit fractions by using number lines.

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Let's Talk:

Which is larger, $\frac{1}{6}$ or $\frac{1}{3}$?

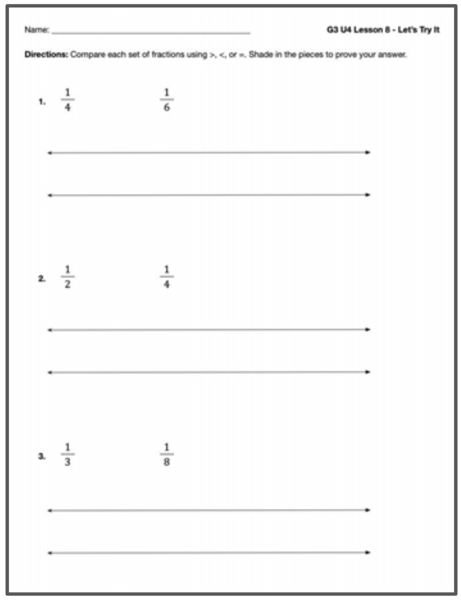
How do you know? If you don't know, how could you find out?

Let's Think:

$\frac{1}{6}$

$\frac{1}{3}$

Let's Try It:


Name: ______________________ **G3 U4 Lesson 8 - Let's Try It**

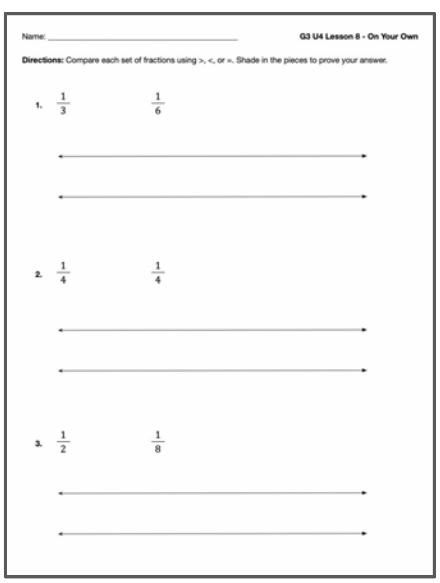
Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

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

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

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

On your Own:

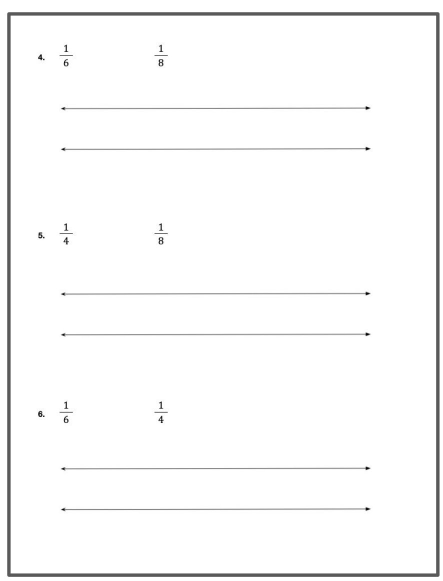

Name: ______________________ **G3 U4 Lesson 8 - On Your Own**

Directions: Compare each set of fractions using >, <, or =. Shade in the pieces to prove your answer.

1. $\frac{1}{3}$ $\frac{1}{6}$

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

3. $\frac{1}{2}$ $\frac{1}{8}$


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

5. $\frac{1}{4}$ $\frac{1}{8}$

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

Name: ____ G3 U4 Lesson 8 - Let's Try It

Directions: Compare each set of fractions using >, <, or =. Draw hops to show the size of the pieces to prove your answer.

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

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

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

Name: ______________________________ G3 U4 Lesson 8 - Independent Work

Directions: Compare each set of fractions using >, <, or =. Draw hops to show the size of the pieces to prove your answer.

1. $\frac{1}{3}$ $\frac{1}{6}$

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

3. $\frac{1}{8}$ $\frac{1}{2}$

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

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

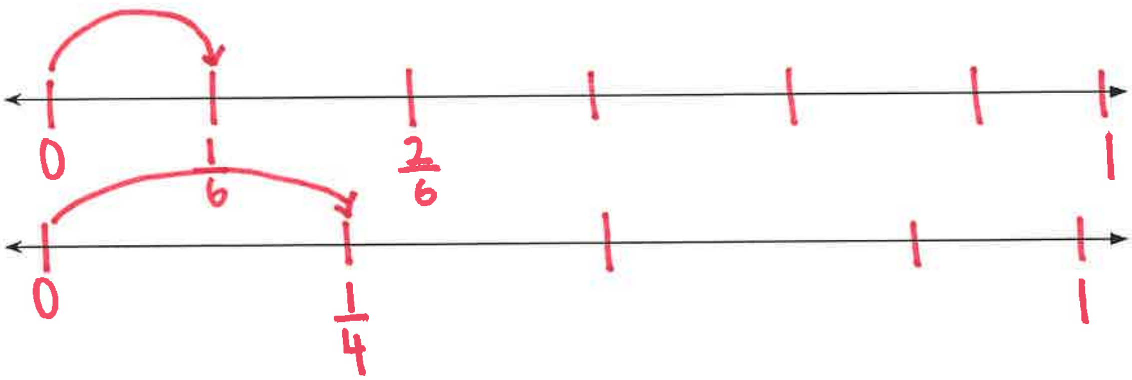
6. $\frac{1}{6}$ $\frac{1}{4}$

Name: ANSWER KEY

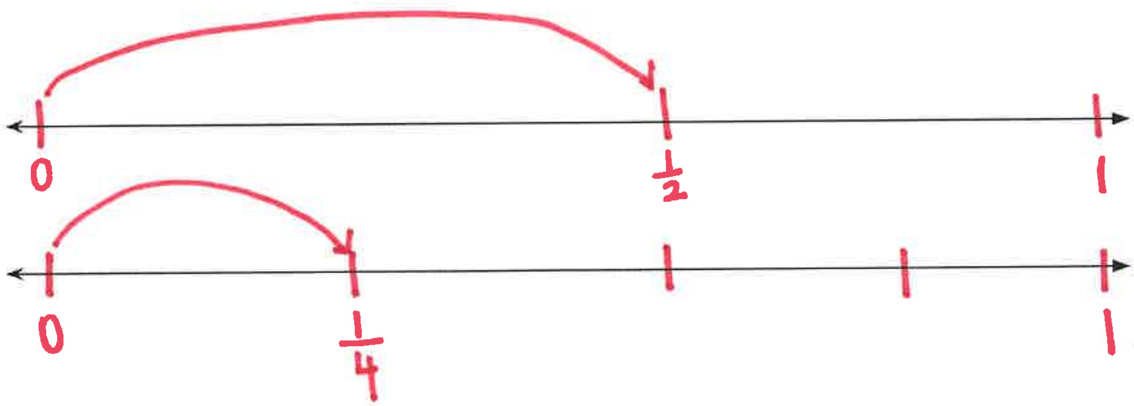
G3 U4 Lesson 8 - Let's Try It

Directions: Compare each set of fractions using >, <, or =. Draw hops to show the size of the pieces to prove your answer.

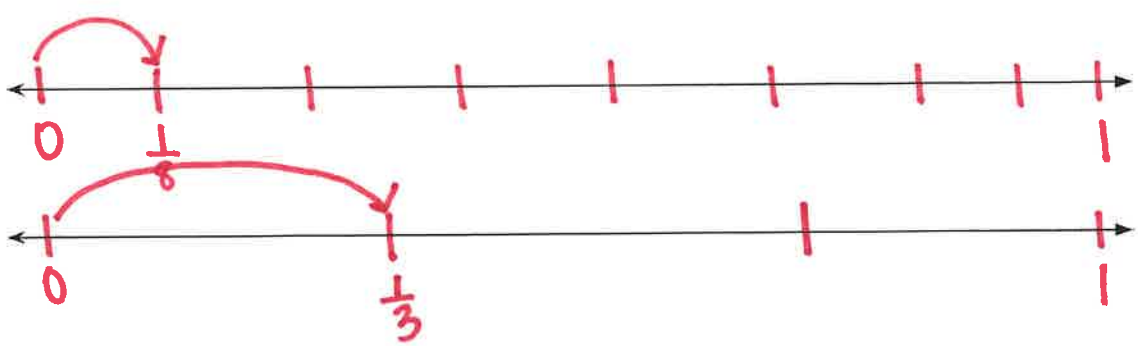
1. $\frac{1}{6}$ $<$ $\frac{1}{4}$



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



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

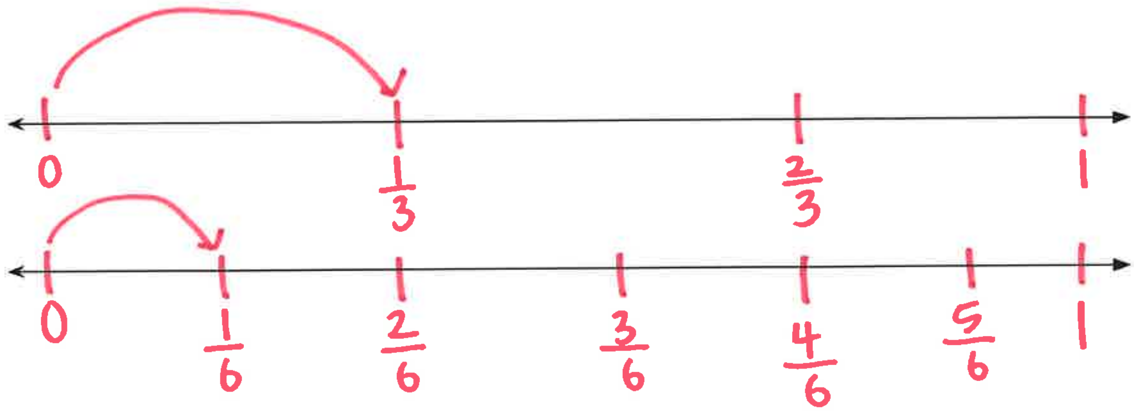


Name: ANSWER KEY

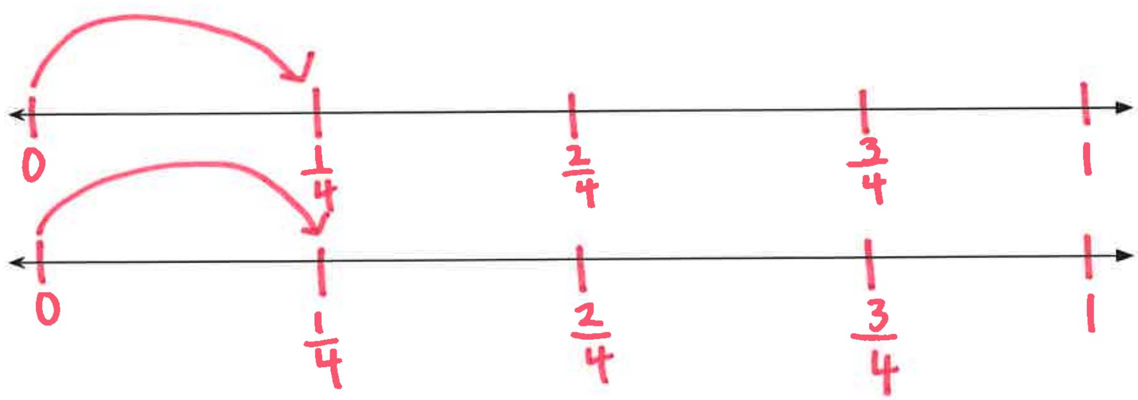
G3 U4 Lesson 8 - Independent Practice

Directions: Compare each set of fractions using >, <, or =. Draw hops to show the size of the pieces to prove your answer.

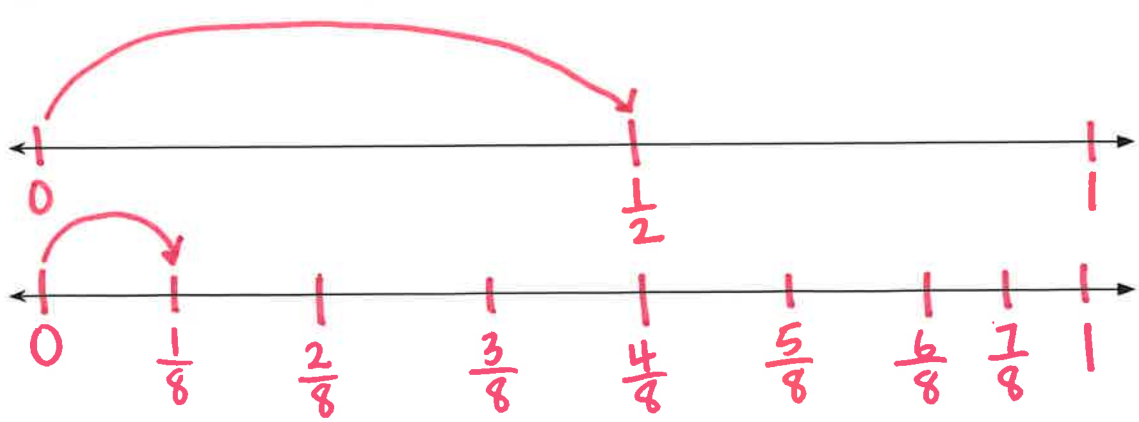
1. $\frac{1}{3}$ > $\frac{1}{6}$



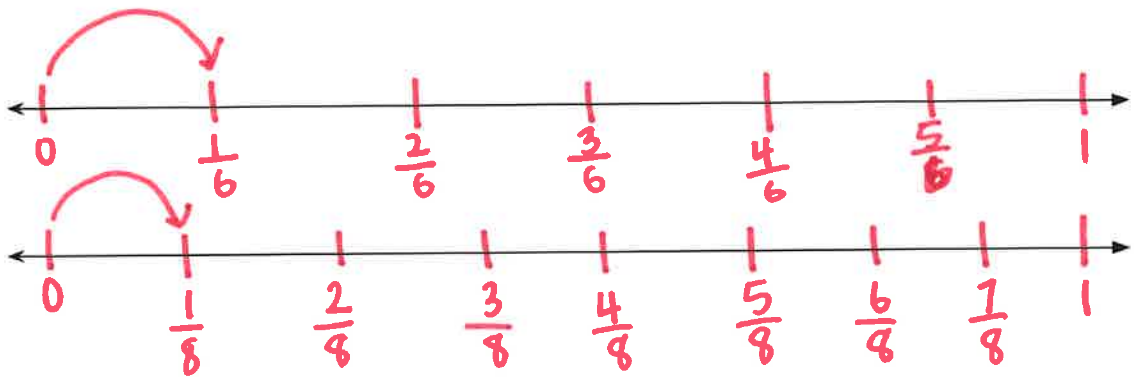
2. $\frac{1}{4}$ = $\frac{1}{4}$



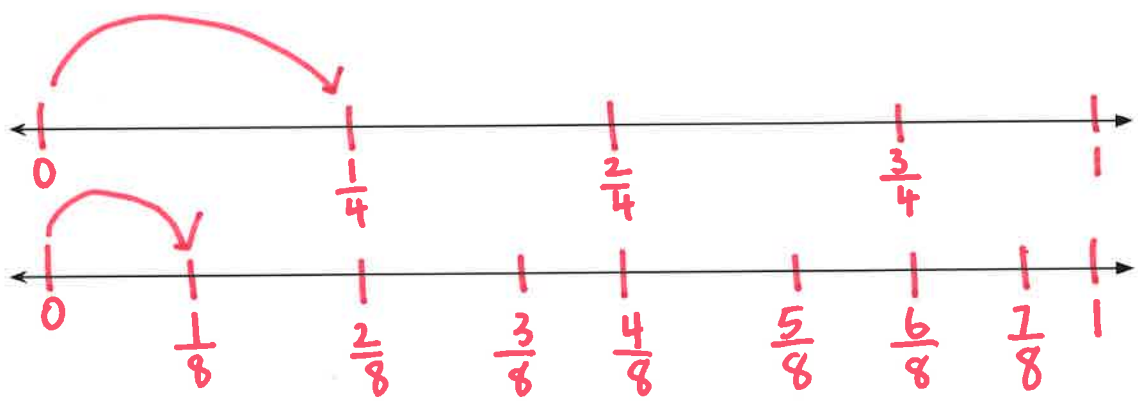
3. $\frac{1}{2}$ > $\frac{1}{8}$



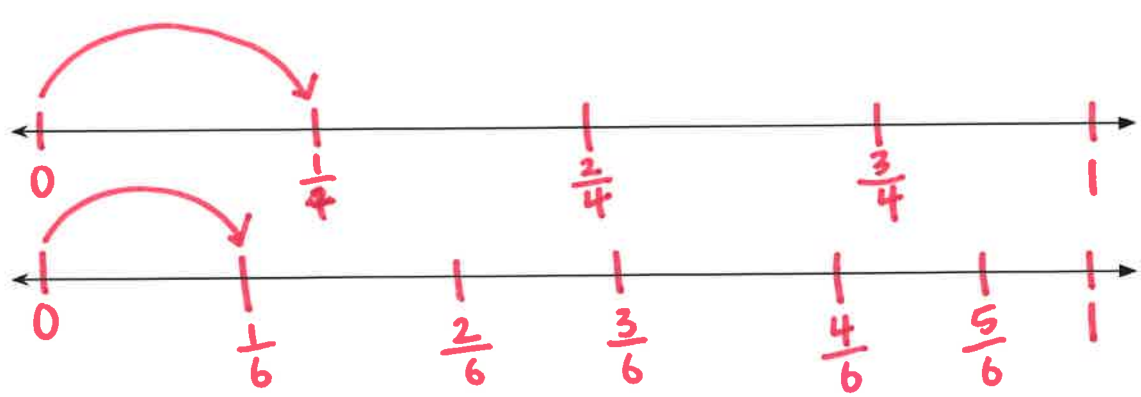
4. $\frac{1}{6}$ > $\frac{1}{8}$



5. $\frac{1}{4}$ > $\frac{1}{8}$



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



G3 U4 Lesson 9

Compare fractions with like numerators

G3 U4 Lesson 9 - Students will compare fractions with like numerators

Warm Welcome (Slide 1): Tutor choice.

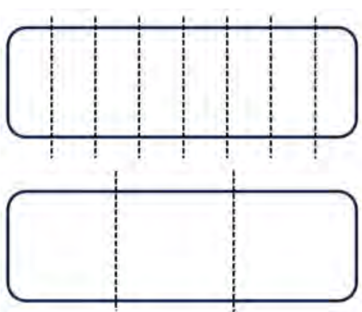
Frame the Learning/Connect to Prior Learning (Slide 2): In the last couple of lessons, we compared unit fractions, where the numerator is one, like ⅓ to ⅛. In all of these comparisons, we were comparing **one** piece in a whole to a different sized piece in a whole. Today, we're going to step it up a notch and compare fractions of *more than one* part or piece.

Let's Talk (Slide 3): On this slide, we're looking at $\frac{2}{3}$ and $\frac{2}{8}$. **How could we use what we know to compare the two fractions?** Possible Student Answers, Key Points:

- *$\frac{2}{3}$ is larger than $\frac{2}{8}$ because $\frac{2}{3}$ is only cut into 3 pieces, so the pieces are larger sizes than eighths.*
- *We're comparing the same number of pieces. If $\frac{1}{3}$ is greater than $\frac{1}{8}$, we know $\frac{2}{3}$ is greater than $\frac{2}{8}$.*
- *$\frac{1}{6}$ is smaller than $\frac{1}{3}$ because it's cut into 6 parts, it's twice as many parts as $\frac{1}{3}$, so the sizes are half the size of a third.*

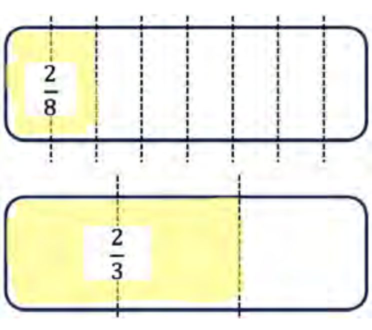
Those are interesting ideas! We can use what we know about comparing UNIT fractions, with just ONE piece to compare other fractions. These are similar because they both have the same number of pieces, which is two.

Let's Talk (Slide 4): We're going to test your hypothesis on this slide! We've learned that we can use number lines or fraction models to help us compare. Let's draw some fraction models. We can use circles or rectangles, I prefer rectangles because they're a little easier to split. I'm going to make sure that the whole wholes that I draw are the exact same side.



Let's start by splitting our wholes into pieces. The first fraction says two eighths. We know that the denominator tells us how many pieces are in one whole. So what should I cut the top whole into? Eight pieces!

And, what should we cut our bottom whole into? Three pieces! That's right, we see that the denominator is three so we could cut it into three equal-sized pieces.



Now, let's shade in and label what we're comparing. We're comparing two eighths, so two out of eight pieces, let me shade those in and label them.

And we're comparing two eights to two thirds, that means two out of three pieces. Let's shade them in and label them.

The model helps me compare! I see that $\frac{2}{8}$ is less than, or smaller than, $\frac{2}{3}$. And you're exactly right that knowing how to compare UNIT fractions can help us compare non-unit fractions. Here, we're comparing fractions that have the same numerator, the same number of pieces, it's pretty similar to comparing unit fractions since unit fractions have the same numerator as well…one!

Let's Try it (Slides 7): You all are such thoughtful mathematicians. Make sure you continue to be thoughtful as you compare fractions with the same numerators. Remember that if they both have the same numerator, then you're using the denominator to compare the fractions. Our denominator tells us the **size** of our pieces. Make an educated guess *before* you draw your number line or fraction strip to prove the comparison. Then, use your drawing to check your thinking!

WARM WELCOME

Today we will compare fractions with like numerators.

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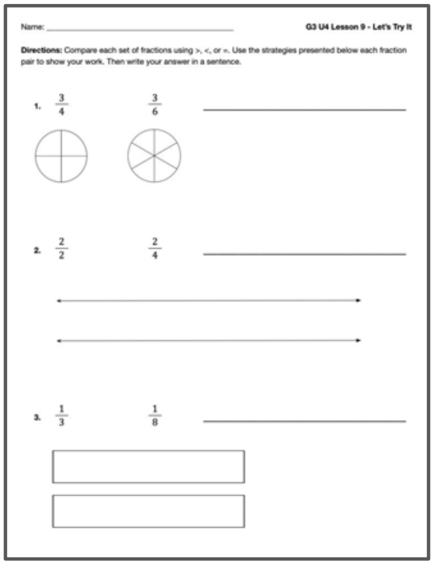
Let's Talk: How can we use what we know to compare these fractions?

$$\frac{2}{3} \quad \frac{2}{8}$$

Let's Talk: Let's compare these fractions.

$$\frac{2}{3} \quad \frac{2}{8}$$

Let's Try It:



Name: ______________________ **G3 U4 Lesson 9 - Let's Try It**

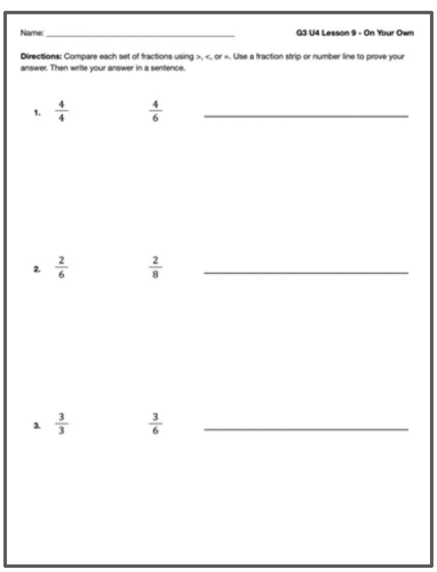
Directions: Compare each set of fractions using >, <, or =. Use the strategies presented below each fraction pair to show your work. Then write your answer in a sentence.

1. $\frac{3}{4}$ $\frac{3}{6}$ ______________________

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

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

On your Own:



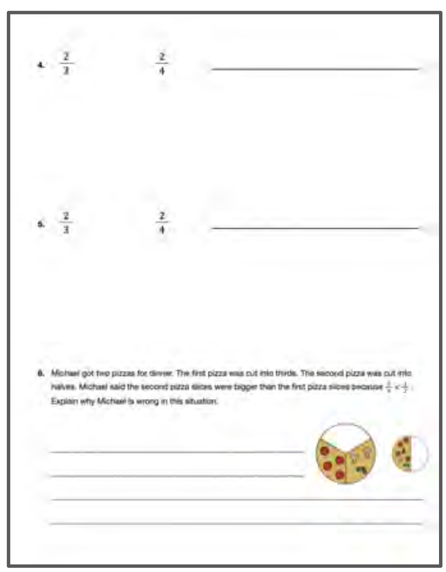
Name: ______________________ **G3 U4 Lesson 9 - On Your Own**

Directions: Compare each set of fractions using >, <, or =. Use a fraction strip or number line to prove your answer. Then write your answer in a sentence.

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

2. $\frac{2}{6}$ $\frac{2}{8}$ ______________________

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



4. $\frac{2}{3}$ $\frac{2}{4}$ ______________________

5. $\frac{2}{3}$ $\frac{2}{4}$ ______________________

6. Michael got two pizzas for dinner. The first pizza was cut into thirds. The second pizza was cut into halves. Michael said the second pizza slices were bigger than the first pizza slices because $\frac{1}{3} < \frac{1}{2}$. Explain why Michael is wrong in this situation.

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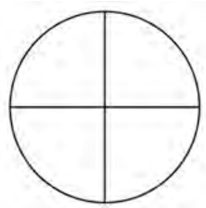
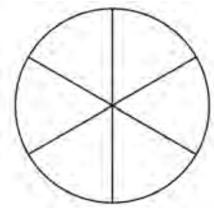
Name: ______________________________

Directions: Compare each set of fractions using >, <, or =. Use the strategies presented below each fraction pair to show your work. Then write your answer in a sentence.

1. $\frac{3}{4}$ $\frac{3}{6}$ ______________________________

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

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

Name: ____ **G3 U4 Lesson 9 - Independent Work**

Directions: Compare each set of fractions using >, <, or =. Use a fraction strip or number line to prove your answer. Then write your answer in a sentence.

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

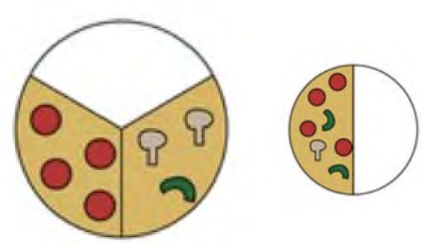
2. $\frac{2}{8}$ $\frac{2}{6}$ ______________________________________

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

4. $\frac{2}{3}$ $\frac{2}{4}$ ______________________

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

6. Michael got two pizzas for dinner. The first pizza was cut into thirds. The second pizza was cut into halves. Michael said the second pizza slices were bigger than the first pizza slices because $\frac{1}{3} < \frac{1}{2}$. Explain why Michael is wrong in this situation.



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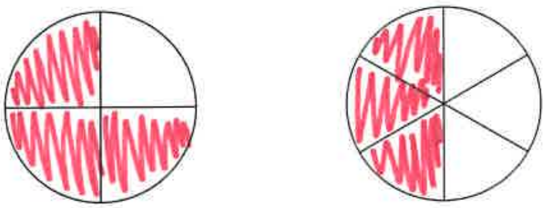
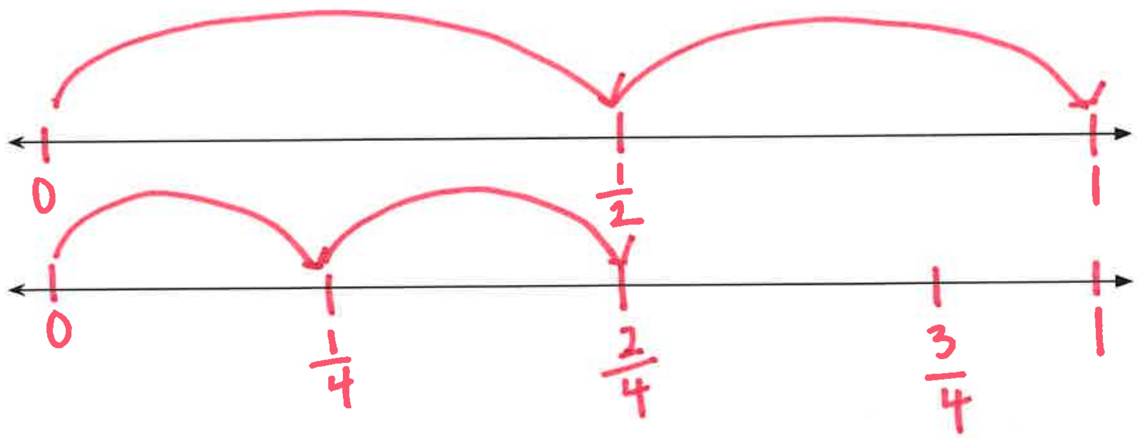
Name: ANSWER KEY

Directions: Compare each set of fractions using >, <, or =. Use the strategies presented below each fraction pair to show your work. Then write your answer in a sentence.

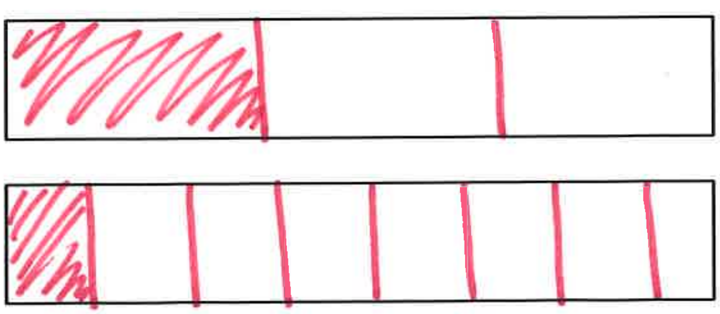
1. $\frac{3}{4}$ > $\frac{3}{6}$ $\frac{3}{4}$ is greater than $\frac{3}{6}$.



2. $\frac{2}{2}$ > $\frac{2}{4}$ $\frac{2}{2}$ is greater than $\frac{2}{4}$.



3. $\frac{1}{3}$ > $\frac{1}{8}$ $\frac{1}{3}$ is greater than $\frac{1}{8}$.



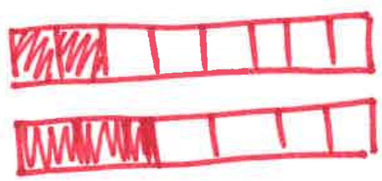
Name: ANSWER KEY

G3 U4 Lesson 9 - Independent Practice

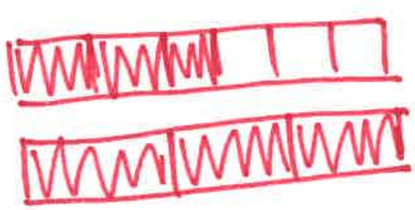
Directions: Compare each set of fractions using >, <, or =. Use a fraction strip or number line to prove your answer. Then write your answer in a sentence.

1. $\frac{4}{4}$ > $\frac{4}{6}$ — $\frac{4}{4}$ is greater than $\frac{4}{6}$

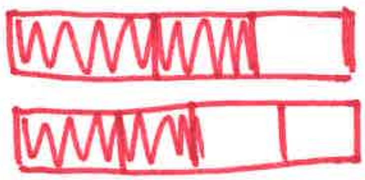
2. $\frac{2}{8}$ < $\frac{2}{6}$ — $\frac{2}{8}$ is less than $\frac{2}{6}$



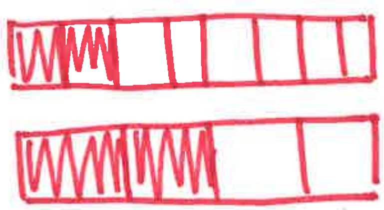
3. $\frac{3}{6}$ < $\frac{3}{3}$ — $\frac{3}{6}$ is less than $\frac{3}{3}$



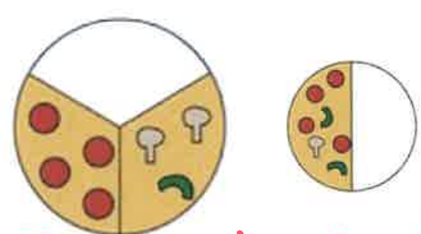
4. $\frac{2}{3}$ > $\frac{2}{4}$ $\frac{2}{3}$ is greater than $\frac{2}{4}$



5. $\frac{2}{8}$ < $\frac{2}{4}$ $\frac{2}{8}$ is less than $\frac{2}{4}$



6. Michael got two pizzas for dinner. The first pizza was cut into thirds. The second pizza was cut into halves. Michael said the second pizza slices were bigger than the first pizza slices because $\frac{1}{3} < \frac{1}{2}$. Explain why Michael is wrong in this situation.



Michael is wrong because the two pizzas are not the same size wholes, so you can't compare them. The first pizza's slices will always be bigger than the second pizza because it's a larger whole!

G3 U4 Lesson 10

Compare fractions with like denominators

G3 U4 Lesson 10 - Students will compare fractions with like denominators

Warm Welcome (Slide 1): Tutor choice.

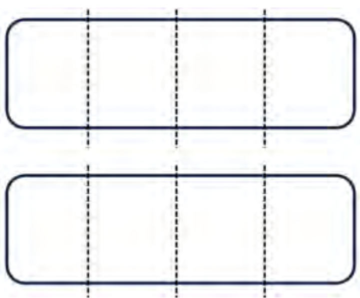
Frame the Learning/Connect to Prior Learning (Slide 2): In the last lesson, we compared fractions with like numerators - the number of pieces were the same, but the size of the pieces were different. Today, we're going to be doing the opposite! We're comparing fractions with like *denominators* but different numerators!

Let's Talk (Slide 3): Looking at this comparison, **how is it different from comparing like numerators? What should we be thinking about differently?** Possible Student Answers, Key Points:

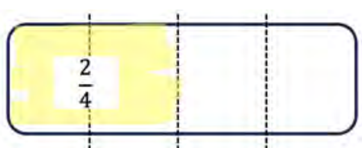
- If the denominators are both the same, then the size of our pieces are all the same
- We don't need to compare the size of the pieces, we just need to compare the numerators - the number of pieces we have.

Those are interesting ideas! Let's draw some models to compare these two fractions.

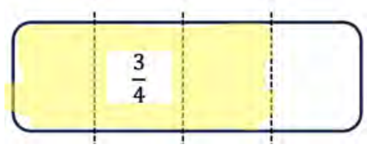
Let's Talk (Slide 4): Let's shade in our pieces and see if our thinking is correct! Just like we've been doing, we're going to make sure that we draw two wholes that are the exact same size.



Now, you all mentioned that since the denominators are the same, the size of the pieces are the same. We're comparing $\frac{2}{4}$ to $\frac{3}{4}$. So, we're comparing fourths. Let's split both wholes into fourths, that's easy!



And, let's shade the top one. How many pieces should we shade in? 2!



Now let's shade the bottom one. How many pieces should we shade in? 3!

So, we're comparing 2 out of 4 pieces to 3 out of 4 pieces. If I only have 2 pieces, I have less than if I had 3 of the same sized pieces. So, $\frac{2}{4}$ *is less than* $\frac{3}{4}$.

So, when we're comparing fractions with *common denominators*, we're not comparing the size of the pieces because they're all the same. Instead, we're going to focus on the *numerators* - how many pieces are shaded in or how many pieces we have!

Let's Think (Slide 5): Before we draw a model to compare these fractions, **what are you noticing and wondering about these two fractions? What ideas do you have to compare them…** Possible Student Answers, Key Points:

- They both have the same numerator and denominator.
- 2 out of 2 is 1 whole, 5 out of 5 is 1 whole.
- I think they're the same because they're both equal to 1 whole.
- I wonder if 5 fifths is bigger because 5 is bigger than 2.
- The fractions have like numerators AND like denominators.

Those are all interesting ideas! Raise your hand if you think $\frac{5}{5}$ is bigger, raise your hand if you think $\frac{2}{2}$ is bigger, raise your hand if you think they're the same! Let's draw a quick picture to explore.

- Everyone draw 2 wholes that are the exact same size.
- Now, how many should we cut the top one into? 5! Go ahead.
- And, how many should we cut the bottom one into? 2! Go ahead.
- Now let's shade, go back to your fractions and shade in 5 fifths and 2 halves.
- Now we're ready to compare. Which is bigger? Neither!

That's right, they're the same! 5 fifths and 2 halves are equal to each other. 2 out of 2 pieces and 5 out of 5 pieces are the same because they both make 1 whole!

Let's Try it (Slides 6-7): So, as you work today, remember to look at the full fraction - denominator and numerator to figure out what you're actually comparing. Make an educated guess on which fraction is greater. Then, prove it with your drawing!

WARM WELCOME

Today we will compare fractions with like denominators.

Let's Talk:

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

Let's Think:

Let's draw a model to compare these fractions.

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

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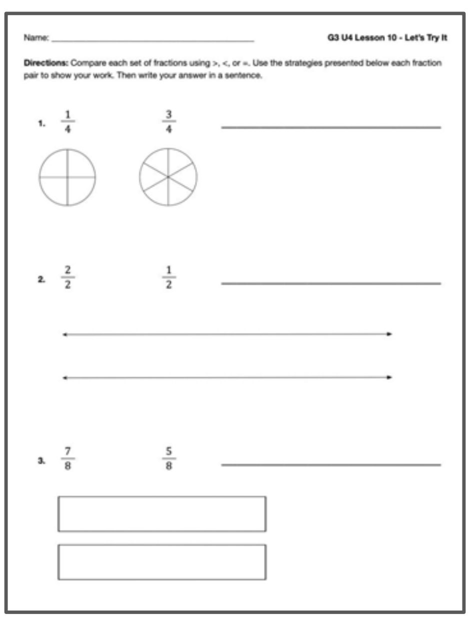
Let's Think:

How can we compare these two fractions?

$$\frac{5}{5} \qquad \frac{2}{2}$$

Let's Try It:



Name: ______________________ **G3 U4 Lesson 10 - Let's Try It**

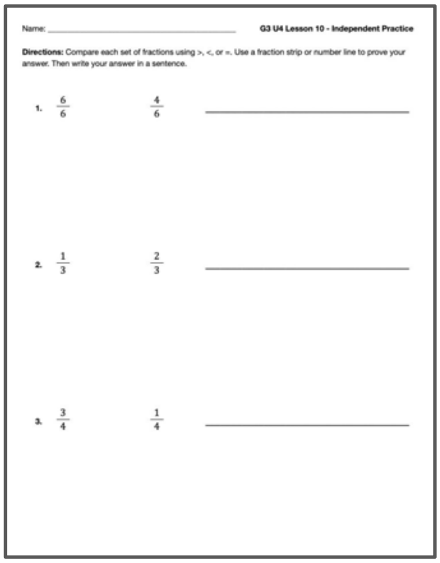
Directions: Compare each set of fractions using >, <, or =. Use the strategies presented below each fraction pair to show your work. Then write your answer in a sentence.

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

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

3. $\frac{7}{8}$ $\frac{5}{8}$ ______________________

On your Own:

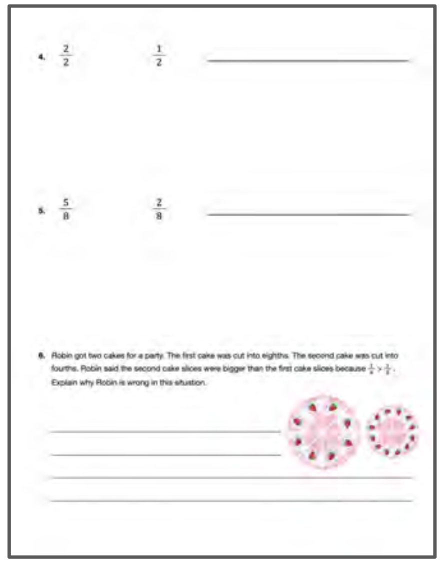

Name: ________________________ **G3 U4 Lesson 10 - Independent Practice**

Directions: Compare each set of fractions using >, <, or =. Use a fraction strip or number line to prove your answer. Then write your answer in a sentence.

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

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

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

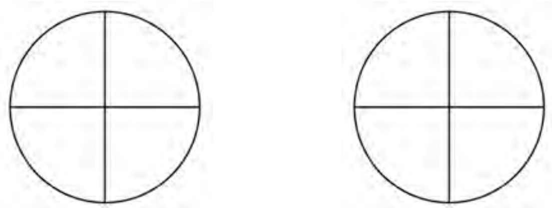

4. $\frac{2}{2}$ $\frac{1}{2}$ ________________

5. $\frac{5}{8}$ $\frac{2}{8}$ ________________

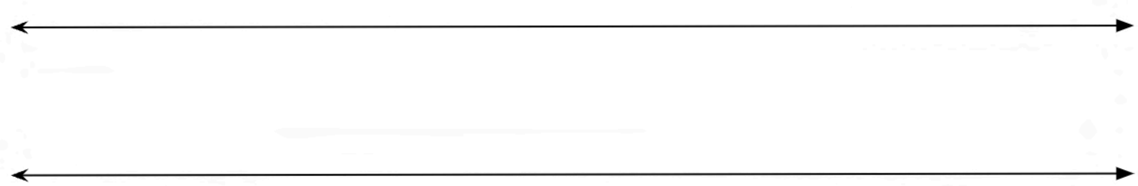
6. Robin got two cakes for a party. The first cake was cut into eighths. The second cake was cut into fourths. Robin said the second cake slices were bigger than the first cake slices because [illegible]. Explain why Robin is wrong in this situation.

Directions: Compare each set of fractions using >, <, or =. Use the strategies presented below each fraction pair to show your work. Then write your answer in a sentence.

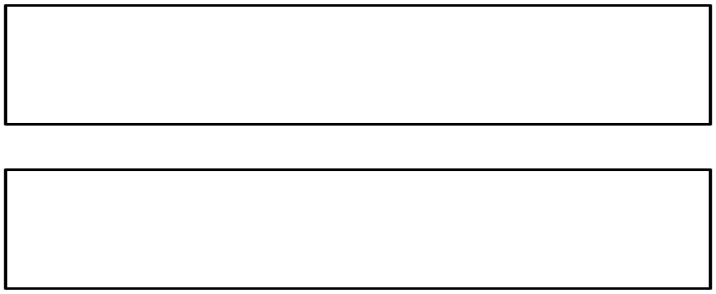
1. $\frac{1}{4}$ $\frac{3}{4}$ ____



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



3. $\frac{7}{8}$ $\frac{5}{8}$ ____



Name: ____ **G3 U4 Lesson 10 - Independent Work**

Directions: Compare each set of fractions using >, <, or =. Use a fraction strip or number line to prove your answer. Then write your answer in a sentence.

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

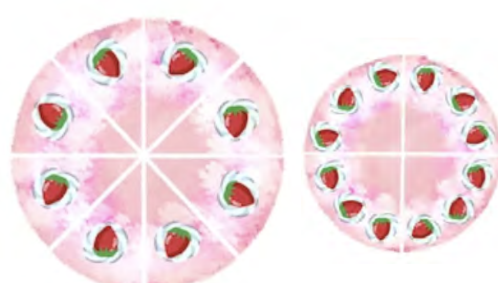
2. $\frac{1}{3}$ $\frac{2}{3}$ ____

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

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

5. $\frac{5}{8}$ $\frac{2}{8}$ ______________________________

6. Robin got two cakes for a party. The first cake was cut into eighths. The second cake was cut into fourths. Robin said the second cake slices were bigger than the first cake slices because $\frac{1}{4} > \frac{1}{8}$. Explain why Robin is wrong in this situation.



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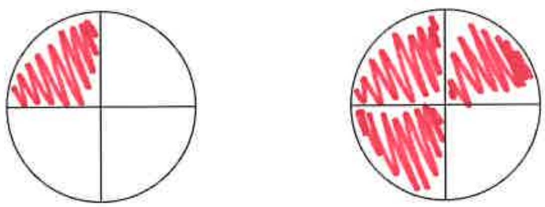
Name: ANSWER KEY

G3 U4 Lesson 10 - Let's Try It

Directions: Compare each set of fractions using >, <, or =. Use the strategies presented below each fraction pair to show your work. Then write your answer in a sentence.

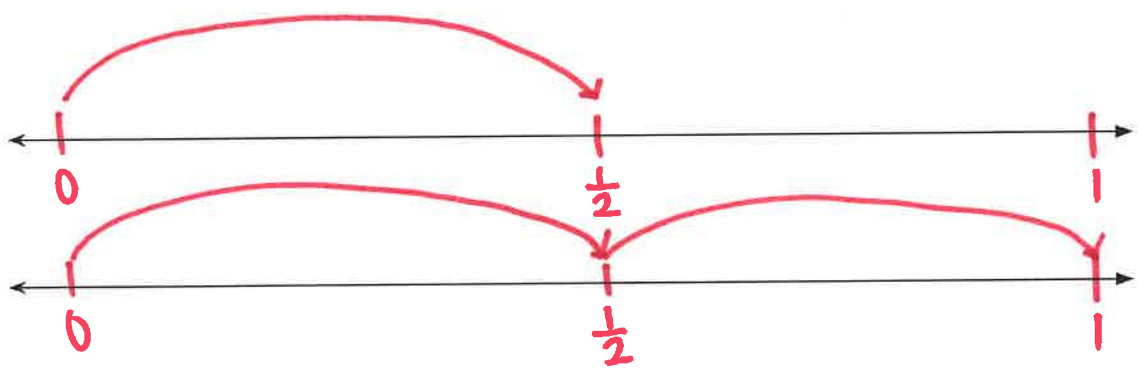
1. $\frac{1}{4}$ < $\frac{3}{4}$

$\frac{1}{4}$ is less than $\frac{3}{4}$.



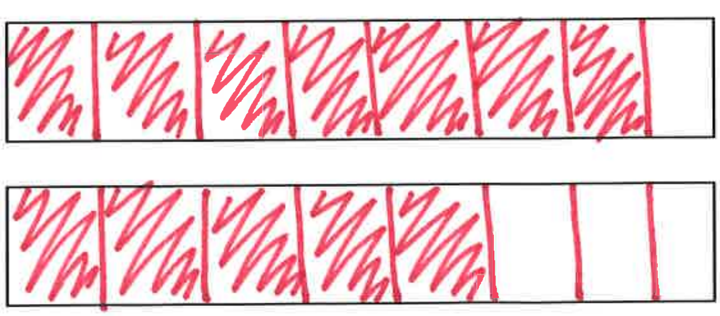
2. $\frac{2}{2}$ > $\frac{1}{2}$

$\frac{2}{2}$ is greater than $\frac{1}{2}$.



3. $\frac{7}{8}$ > $\frac{5}{8}$

$\frac{7}{8}$ is greater than $\frac{5}{8}$.



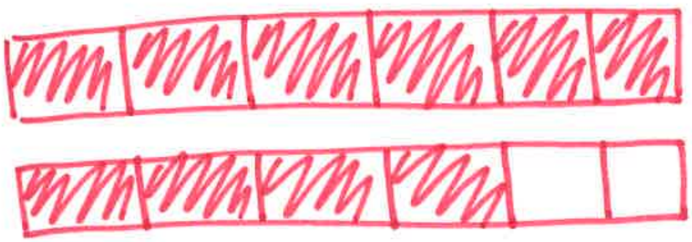
Name: ANSWER KEY

G3 U4 Lesson 10 - Independent Practice

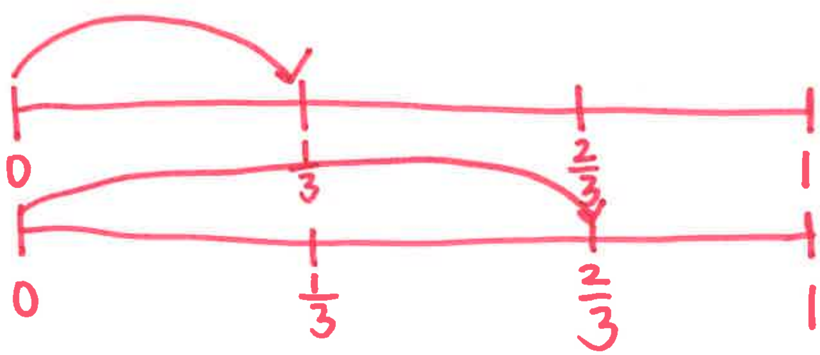
Directions: Compare each set of fractions using >, <, or =. Use a fraction strip or number line to prove your answer. Then write your answer in a sentence.

Student work will vary.

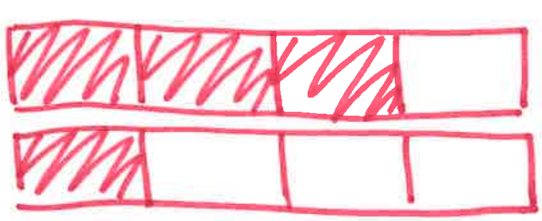
1. $\frac{6}{6}$ $>$ $\frac{4}{6}$ $\frac{6}{6}$ is greater than $\frac{4}{6}$.



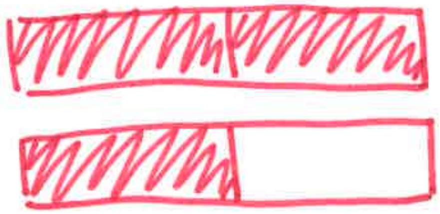
2. $\frac{1}{3}$ $<$ $\frac{2}{3}$ $\frac{1}{3}$ is less than $\frac{2}{3}$.



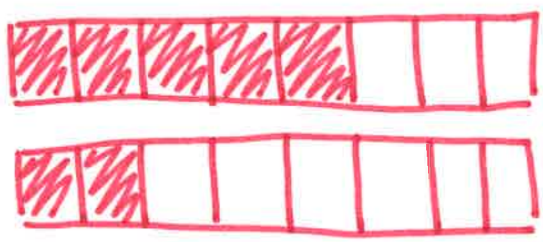
3. $\frac{3}{4}$ $>$ $\frac{1}{4}$ $\frac{3}{4}$ is greater than $\frac{1}{4}$.



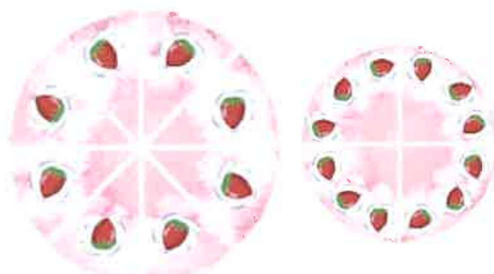
4. $\frac{2}{2}$ > $\frac{1}{2}$ $\frac{2}{2}$ is greater than $\frac{1}{2}$.



5. $\frac{5}{8}$ > $\frac{2}{8}$ $\frac{5}{8}$ is greater than $\frac{2}{8}$.



6. Robin got two cakes for a party. The first cake was cut into eighths. The second cake was cut into fourths. Robin said the second cake slices were bigger than the first cake slices because $\frac{1}{4} > \frac{1}{8}$. Explain why Robin is wrong in this situation.



Robin is wrong because the cakes are not equal wholes, so the size of each slice can't be compared. The larger cake will automatically have larger size pieces.

G3 U4 Lesson 11

Use models to find equivalent fractions

G3 U4 Lesson 11 - Students will use models to find equivalent fractions

Materials:
- Fraction tiles for every student (optional)

Warm Welcome (Slide 1): Tutor choice.

Frame the Learning/Connect to Prior Learning (Slide 2): In the last few lessons, we compared fractions to see whether one fraction was bigger or smaller than another fraction. But what about when fractions are equivalent? equivalent means the same as, or equal. We started to explore this yesterday when we looked at $\frac{2}{2}$ and $\frac{5}{5}$. We realized they were the same, or equivalent, because they both were the same as 1 whole. Today we're going to explore whether fractions with different numbers in their numerator and denominator can be equivalent.

Let's Talk (Slide 3): We have three bars here - what do you notice about the bars? Possible Student Answers, Key Points:
- One bar is just one whole - it isn't cut at all and one bar is cut into halves - it's just in two pieces, and the last bar is cut into fourths - it's in four pieces
- They're all the same size whole but cut into different sizes
- They show us the size of each part of the whole and we can see a few places where the lines match up!
- They look like our fraction models that we've been drawing!

Interesting! You all are making connections to the fraction models that we have been drawing over the last few lessons.

Let's Talk (Slide 4): Now I want you to look closely at $\frac{1}{2}$ and $\frac{2}{4}$, what relationship do you notice? Possible Student Answers, Key Points:
- They're the same size pieces
- Two of the fourths make up one of the halves
- They stop at the same spot, they are the same size.

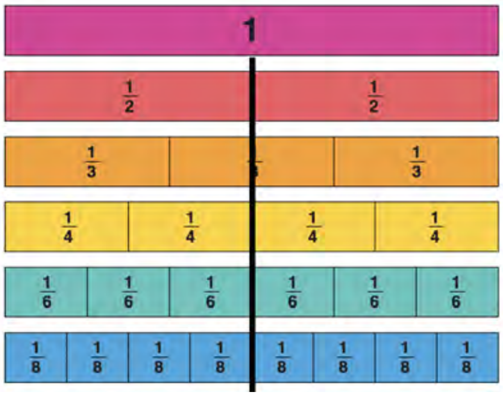
Note: *If students do not come up with answers on their own, tell them the key points and outline the equivalency on the slide - to show them how* $\frac{1}{2} = \frac{2}{4}$

Look, $\frac{1}{2}$ and $\frac{2}{4}$ take up the same amount of space! They're the exact same size. I can tell they're the same because the line where they are cut matches up perfectly! That tells me that they are **equivalent.** I can show this equivalency by writing $\frac{1}{2} = \frac{2}{4}$ because even though the digits in the fraction are different, the size of the pieces are exactly the same!

Do you notice that when we make fourths or eighths with our fraction strips, we always start with halves? Why do you think that is? **Possible Student Answers, Key Points:**
- *It's because two is half of four and four is half of eight.*
- *If you add two and two together, you get four! If you add four and four together, you get eight!*
- *Two groups of two (2 x 2) makes 4 and two groups of 4 (2 x 4) makes 8*

That's right! And that's the same reason why $\frac{1}{2} = \frac{2}{4}$. There are **two** groups of $\frac{1}{4}$ in **one** group of a half because 2 is half of four and 1 is half of 2! They're all equal to one half! Another way to think about it is, when we cut fourths, we always start with $\frac{1}{2}$ and to make fourths we take one piece of a half and cut it into two more pieces to make fourths. That's why $\frac{1}{2} = \frac{2}{4}$. There are two fourths in **one** half.

Let's Think (Slide 5): Here are a few more fraction strips, let's see if we notice any other relationships between fractions. (*Give students time to share*).



So, let's see if we can find other fractions that are equivalent to one half. Let's drag a line down from ½ to make it easier to see. Oh, now I can easily find some fractions that are equivalent to one half.

For example, how many eighths are equal to one half? 4 eighths!

And, how many sixths are equal to one half? 3 sixths!

So, $\frac{3}{6}$ and $\frac{4}{8}$ and $\frac{2}{4}$ are equivalent to one half. Why does that make sense? Possible Student Answers, Key Points:

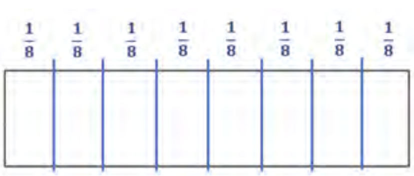
- When we're making eighths, we always start with one-half first. Then we cut a half into two pieces and then again into two pieces to make eighths. So there are 4 eighths in one half.
- Well, 4 is half of 8 and 3 is half of 6 and 1 is half of 2 so they're all equal to one half.

Do you see anywhere else in these fraction strips where a number of fraction pieces equals another fraction piece? Remember you're looking to see where the fraction strip cuts match up with another cut because equivalences mean the size of the pieces are the same - they take up the same amount of space! Possible Student Answers, Key Points:

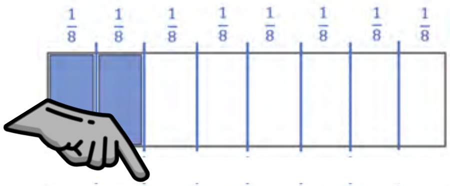
- I see that $\frac{2}{2}$ (or any total fraction with all of its pieces) is equal to 1 whole!
- I see that $\frac{1}{3}$ is equal to $\frac{2}{6}$!
- I see that $\frac{1}{2}$ is equal to any other fraction that is half of the whole!

But, we won't always have these bars to help us find equivalent fractions, what if I don't have these easy to read bars to see what's equivalent? What can I do then to find equivalent fractions?

Let's Think (Slide 6): We can draw our own! This equivalency is missing the **numerator** for fourths. We're trying to make it equal to $\frac{2}{8}$. That means it's asking us to figure out how many fourths are equivalent to $\frac{2}{8}$. Let's draw it out and see!

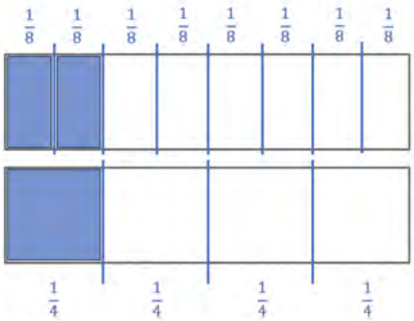


I'll start with my eighths first, since that's the first fraction and I know both the numerator and denominator for it. (*Make sure to split the eighths starting with a half - split the halves into fourths and then the fourths into eighths. Be deliberate about it so students see the process of how eighths are made from halves and fourths*)



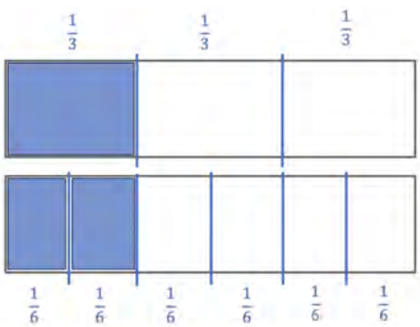
I'm going to shade in two pieces because the fraction is $\frac{2}{8}$.

Now, I'm going to draw fourths. Hmm, how many fourths will match up with $\frac{2}{8}$? Let's look for where the cuts meet up!



That's right! $\frac{1}{4}$ is the **same size** as $\frac{2}{8}$! They both take up the same amount of space, even though they have different numerators and denominators! And that makes sense because 4 is *half* of 8! We have to make fourths before we can make eighths. That means that $\frac{2}{8} = \frac{1}{4}$, so I would write in **1** as my missing numerator!

Let's Think (Slide 7): Now let's look at another one. We want to know how many sixths are equivalent to ⅓.



Okay, so, we're trying to figure out how many sixths are in ⅓.

Everyone try it on your whiteboards and then we'll work together to draw a picture to prove it.

According to your work, how many sixths are in ⅓? 2 sixths!

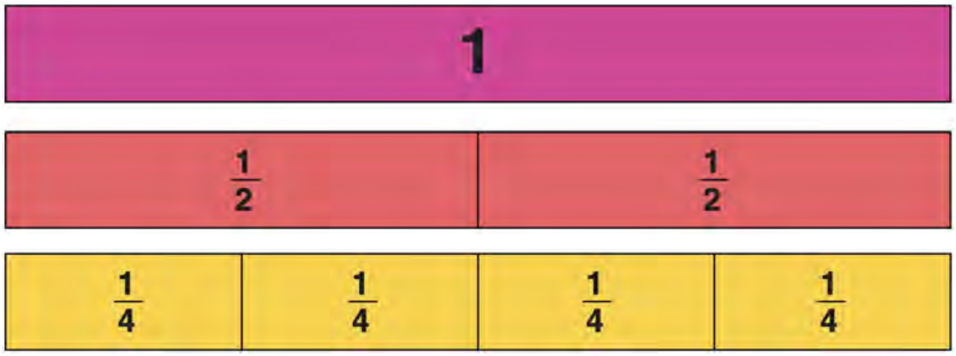
Let's Try it (Slides 8-9): So, as you work today, remember that fractions are equivalent when they are the same size and **take up the same amount of space**. You can figure out if they're equivalent by drawing equal sized wholes and cutting them according to the denominator - but then make sure you're looking at the numerator to see how many pieces you're comparing!

Note: For the Independent Practice, students can use the printable fraction tiles and use a piece of paper or a pen to find the equivalencies on the fraction strips provided. They should be starting from the left so they can see the number of fraction pieces that are equivalent.

WARM WELCOME

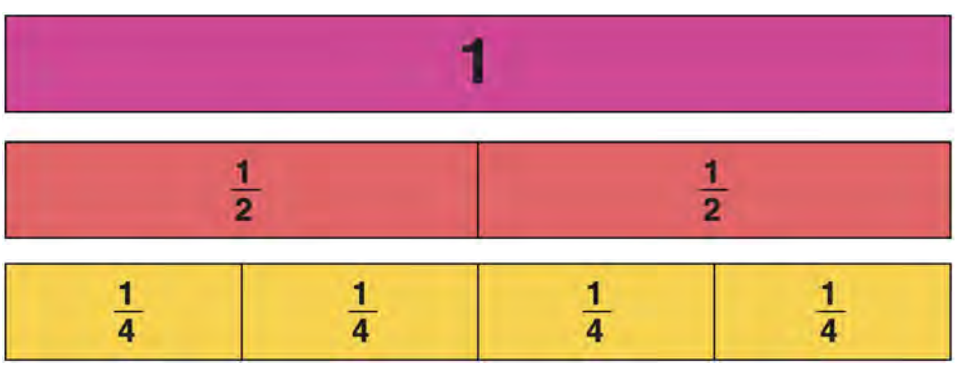
Today we will use models to find equivalent fractions.

Let's Talk:



Let's Talk:

What relationship do you notice between $\frac{1}{2}$ and $\frac{2}{4}$?



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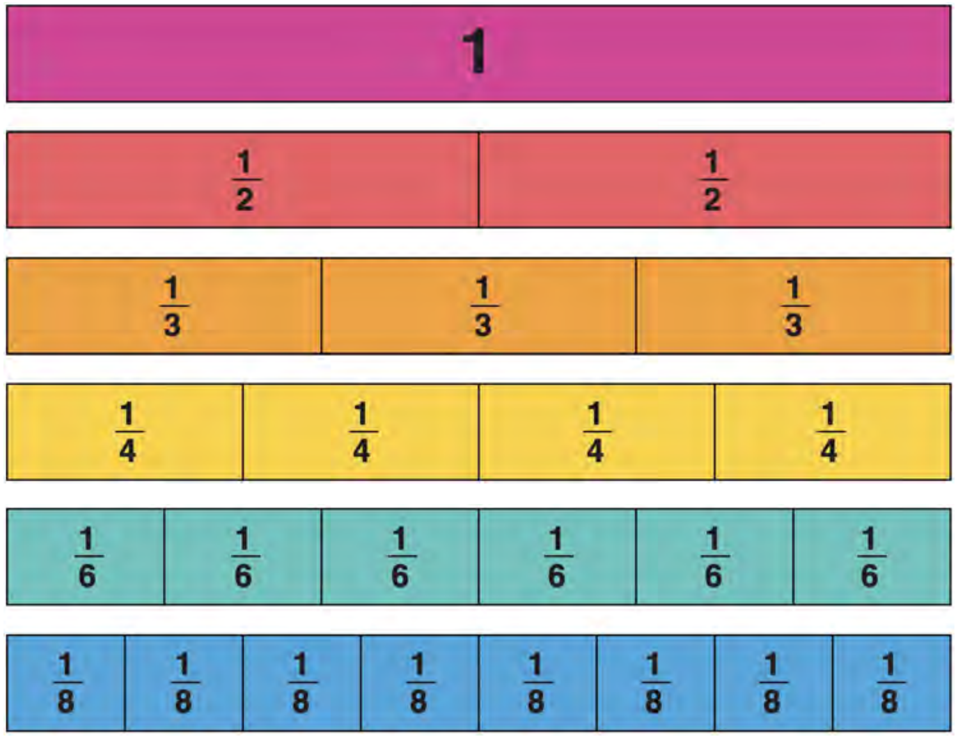
Let's Talk:

What other relationships do you notice between the fraction strips?



Let's Think:

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

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Let's Think:

$$\frac{1}{3} = \frac{?}{6}$$

Let's Try It:

Name: ______________________________ **G3 U4 Lesson 11 - Let's Try It**

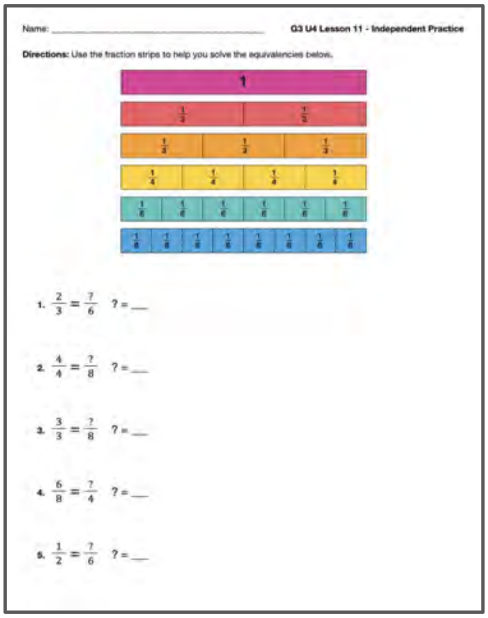
Directions: Find the missing numerator in each equivalent pair of fractions. Use fraction strips to prove their equivalency.

1. $\frac{1}{4} = \frac{?}{8}$? = ___

2. $\frac{2}{2} = \frac{?}{4}$? = ___

3. $\frac{4}{6} = \frac{?}{3}$? = ___

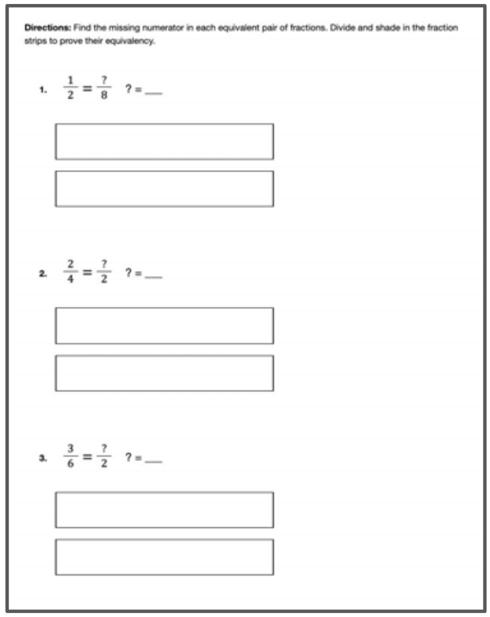
On your Own:



Name: ______________________ G3 U4 Lesson 11 - Independent Practice

Directions: Use the fraction strips to help you solve the equivalencies below.

1. $\frac{2}{3} = \frac{?}{6}$? = ___
2. $\frac{4}{4} = \frac{?}{8}$? = ___
3. $\frac{3}{3} = \frac{?}{8}$? = ___
4. $\frac{6}{8} = \frac{?}{4}$? = ___
5. $\frac{1}{2} = \frac{?}{6}$? = ___



Directions: Find the missing numerator in each equivalent pair of fractions. Divide and shade in the fraction strips to prove their equivalency.

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

Name: ____ **G3 U4 Lesson 11 - Let's Try It**

Directions: Find the missing numerator in each equivalent pair of fractions. Use fraction strips to prove their equivalency.

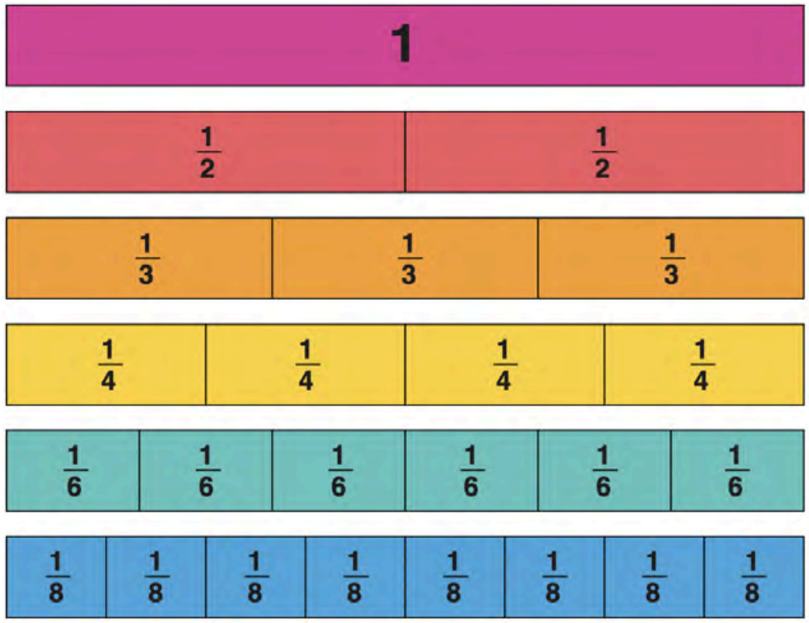
1. $\frac{1}{4} = \frac{?}{8}$? = ___

2. $\frac{2}{2} = \frac{?}{4}$? = ___

3. $\frac{4}{6} = \frac{?}{3}$? = ___

Name: ______________________________ **G3 U4 Lesson 11 - Independent Work**

Directions: Use the fraction strips to help you solve the equivalencies below.



1. $\frac{2}{3} = \frac{?}{6}$? = ____

2. $\frac{4}{4} = \frac{?}{8}$? = ____

3. $\frac{3}{3} = \frac{?}{8}$? = ____

4. $\frac{6}{8} = \frac{?}{4}$? = ____

5. $\frac{1}{2} = \frac{?}{6}$? = ____

Directions: Find the missing numerator in each equivalent pair of fractions. Divide and shade in the fraction strips to prove their equivalency.

1. $\frac{1}{2} = \frac{?}{8}$? = ___

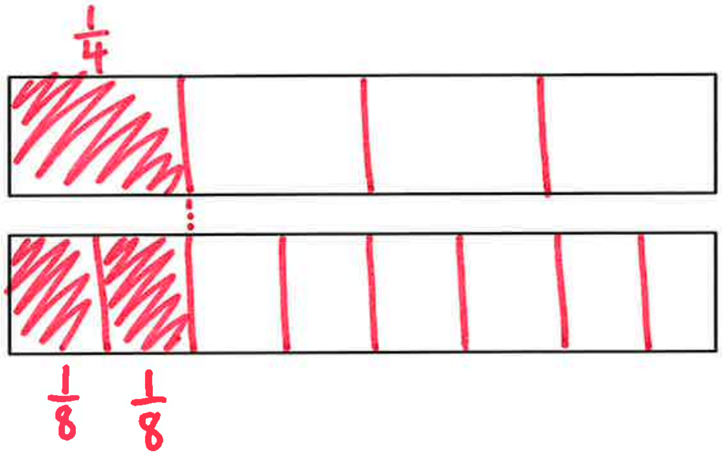
2. $\frac{2}{4} = \frac{?}{2}$? = ___

3. $\frac{3}{6} = \frac{?}{2}$? = ___

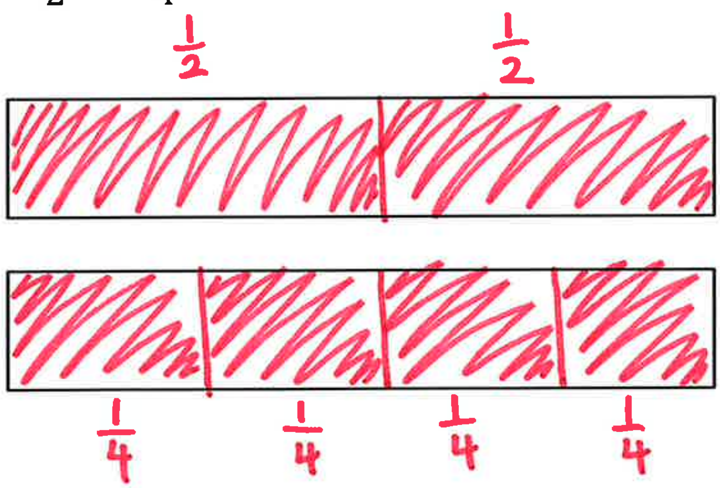
Name: ANSWER KEY

Directions: Find the missing numerator in each equivalent pair of fractions. Use fraction strips to prove their equivalency.

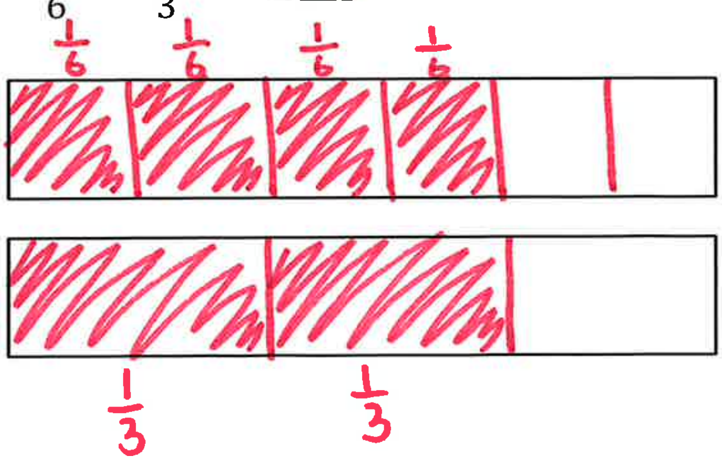
1. $\frac{1}{4} = \frac{?}{8}$? = 2



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



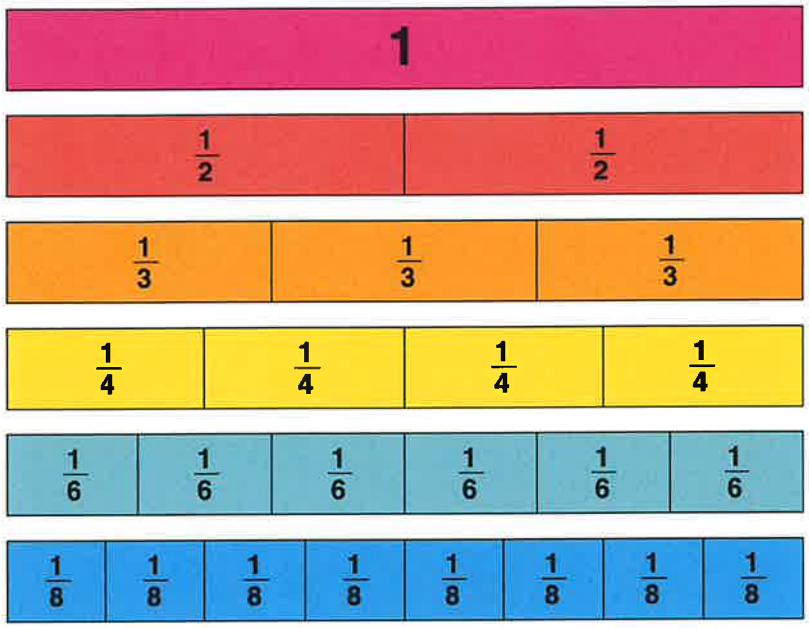
3. $\frac{4}{6} = \frac{?}{3}$? = 2



Name: ANSWER KEY

G3 U4 Lesson 11 - Independent Practice

Directions: Use the fraction strips to help you solve the equivalencies below.



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

2. $\frac{4}{4} = \frac{?}{8}$? = 8

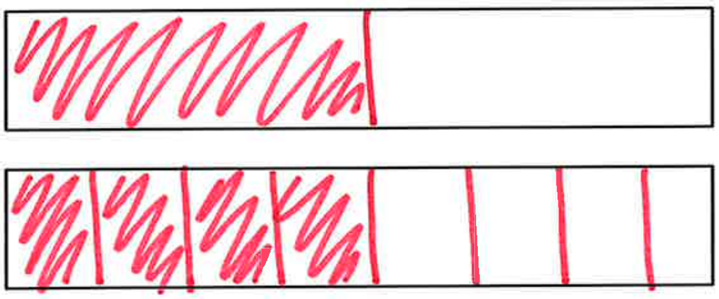
3. $\frac{3}{3} = \frac{?}{8}$? = 8

4. $\frac{6}{8} = \frac{?}{4}$? = 3

5. $\frac{1}{2} = \frac{?}{6}$? = 3

Directions: Find the missing numerator in each equivalent pair of fractions. Divide and shade in the fraction strips to prove their equivalency.

1. $\frac{1}{2} = \frac{?}{8}$? = 4



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

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

G3 U4 Lesson 12

Use number lines to find equivalent fractions

G3 U4 Lesson 12 - Students will use number lines to find equivalent fractions

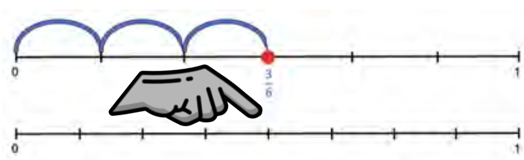
Warm Welcome (Slide 1): Tutor choice.

Frame the Learning/Connect to Prior Learning (Slide 2): In the last lesson we used fraction strips to find equivalent fractions like $\frac{1}{2} = \frac{2}{4}$. We saw that fractions are equivalent when they take up the same amount of space and are the same size. Today, we're doing the exact same work, but this time with a number line!

Let's Talk (Slide 3): We have two number lines here - one cut into halves and one into sixths. Using what we learned last lesson, **how could we use these number lines to find equivalencies?** Possible Student Answers, Key Points:

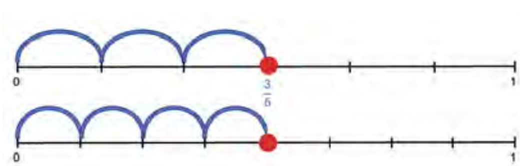
- We can look to see where the lines match up!
- We're looking to see what parts of the first number line (halves) take up the same amount of space as the second number line (sixths).
- They're just like fraction tiles, you can see where they line up!

Let's Think (Slide 4): Great thinking! So, knowing that we're looking for parts that line up and take up the same amount of space, let's look at these two number lines - the top is cut into sixths and the bottom number line is cut into eighths. The question says, how many eighths are in **3** sixths?

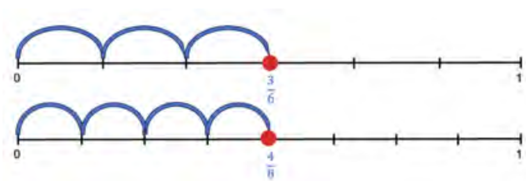


Let's start with what we know - we have three sixths, so I'm going to find that on the number line first. I'm going to take three hops and now I know where $\frac{3}{6}$ is, so I'll put a dot right here.

Now, I need to find the same spot on the eighths number line to find an equivalent fraction. Remember, I'm trying to find *equivalent* fractions, so they have to take up the same amount of space. So, look, I can just drag my finger down and mark it.



So, let me go back and draw hops…I'm going to stop here because I can see that the ticks match up perfectly! That means they both take up the same amount of space.

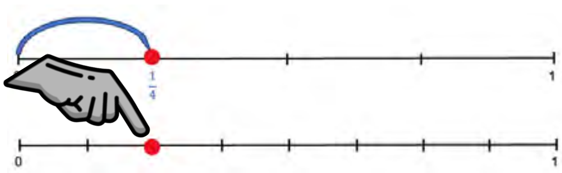


Now, let me go back and count the hops so I can label the point! (*Retrace the hops and count as you go, then label the tick* $\frac{4}{8}$)

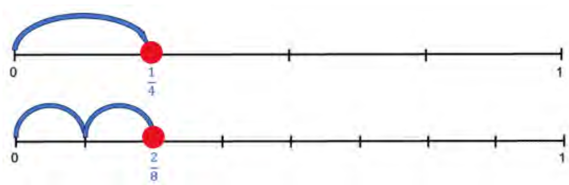
Looking at these two number lines, I can see that $\frac{3}{6} = \frac{4}{8}$! Looking at this equation, **what do you notice about the two fractions that makes sense they would be equivalent?** Possible Student Answers, Key Points:

- It makes sense because three is half of 6 and four is half of 8, so they're both equivalent to ½
- Both numbers are half of a whole, so they're both equal to ½, so they'd also be equal to each other!

Let's Think (Slide 5): Let's try this one. What are we finding equivalencies for in this problem? Eighths and fourths. We want to see how many eighths are in ¼. Right!



So how would I start? Find $\frac{1}{4}$ on the number line because it's what we know already. Ok, let's do that and label it. Now, what should we do? Mark the same spot on the number line!



What's my next step? We're going to hop on the eighths number line until we get to the same spot - because that'll mean they're the same size pieces.

So, looking at these two number lines, what equivalency do you see? $\frac{1}{4} = \frac{2}{8}$ Great job! Write that down on your board! So, let me ask you again, looking at this equation, what do you notice about the two fractions that makes sense they would be equivalent?Possible Student Answers, Key Points:

- It makes sense because for us to make eighths we have to cut a fourth in half. So there has to be two eighths in one fourth.
- It makes sense because when we're cutting our number line into eighths we cut every fourth into two pieces - so we have two eighths in every fourth we made in our number line.
- They are the same size and take up the same amount of space.

Let's Try it (Slides 6): So, as you work today, remember that fractions are equivalent when they are the same size and **take up the same amount of space**. You can figure out if they're equivalent by making sure they are equal sized pieces on a number line. Remember to use your hops to find the correct numerator, or number of parts, that will create an equivalency!

WARM WELCOME

Today we will use number lines to find equivalent fractions.

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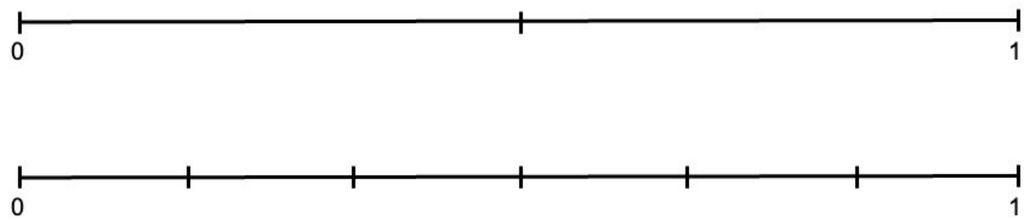
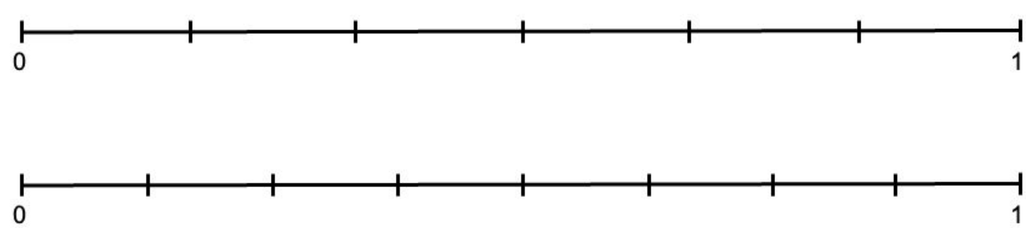
Let's Talk:

How could we use these number lines to find equivalencies?



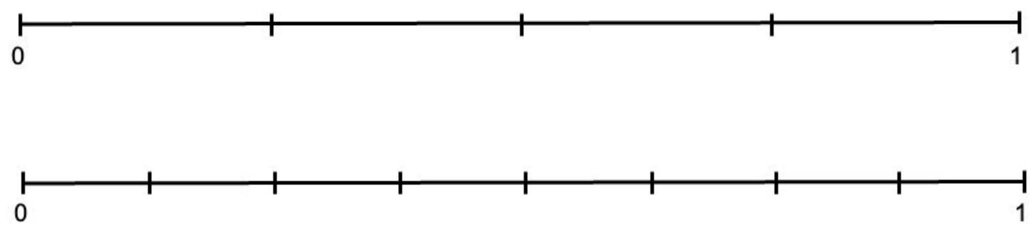
Let's Think:

How many eighths are in three-sixths?



Let's Think:

How many eighths are in one-fourth?



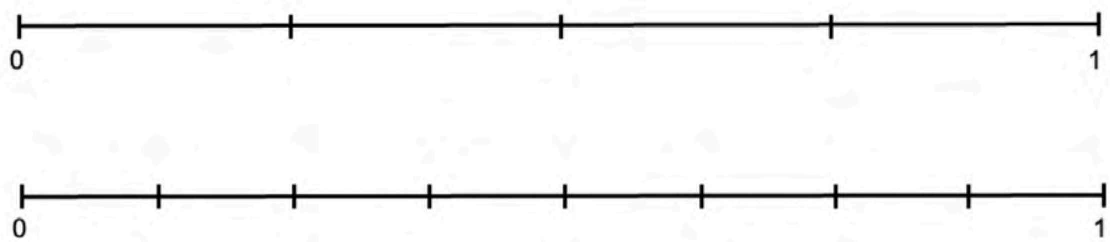
Let's Try It:

On your Own:

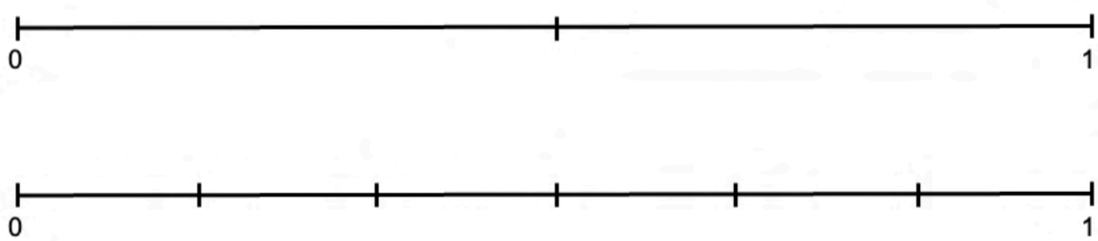
Name: ____

Directions: Find the missing numerator in each equivalent pair of fractions. Use the number lines to prove the equivalency.

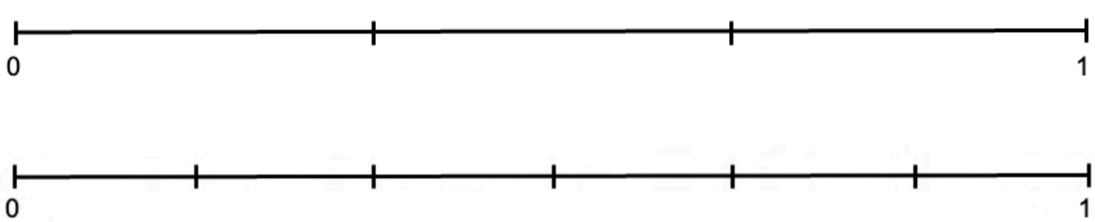
1. $\frac{2}{4} = \frac{?}{8}$? = ___



2. $\frac{1}{2} = \frac{?}{6}$? = ___



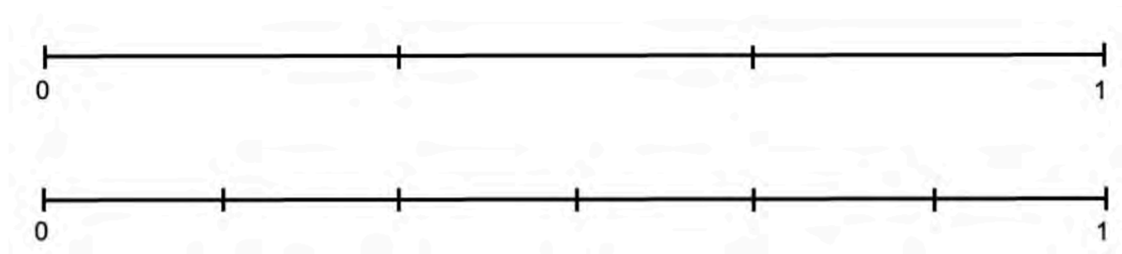
3. $\frac{4}{6} = \frac{?}{3}$? = ___



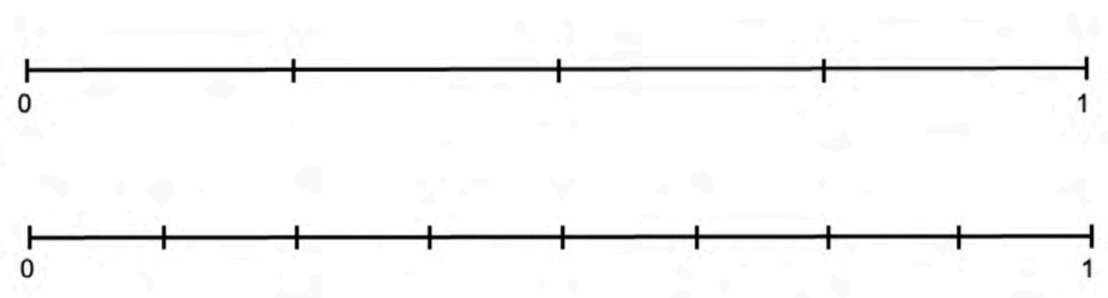
Name: ____ G3 U4 Lesson 12 - Independent Work

Directions: Use the number lines below to help you solve the missing numerators to each equivalency.

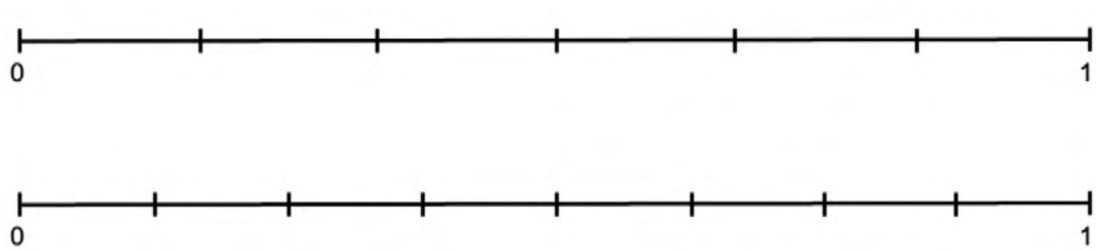
1. $\frac{2}{3} = \frac{?}{6}$? = ___



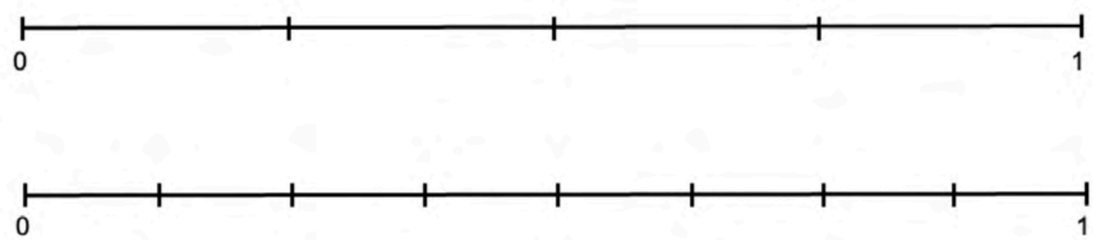
2. $\frac{4}{4} = \frac{?}{8}$? = ___



3. $\frac{3}{6} = \frac{?}{8}$? = ___

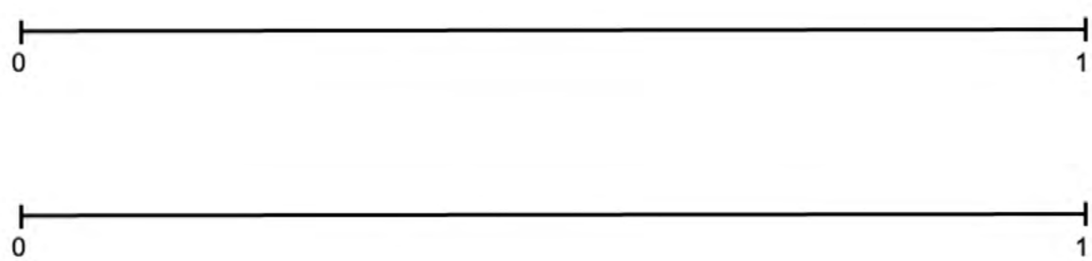


4. $\frac{6}{8} = \frac{?}{4}$? = ___

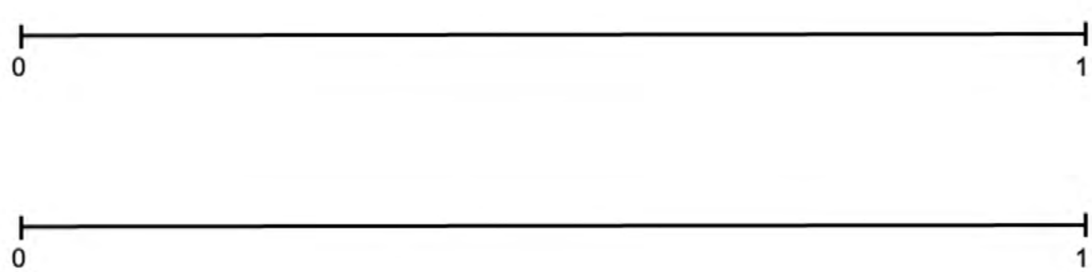


Directions: Find the missing numerator in each equivalent pair of fractions. Divide the number line to find and prove your answer.

1. $\frac{1}{4} = \frac{?}{8}$? = ___



2. $\frac{2}{4} = \frac{?}{2}$? = ___

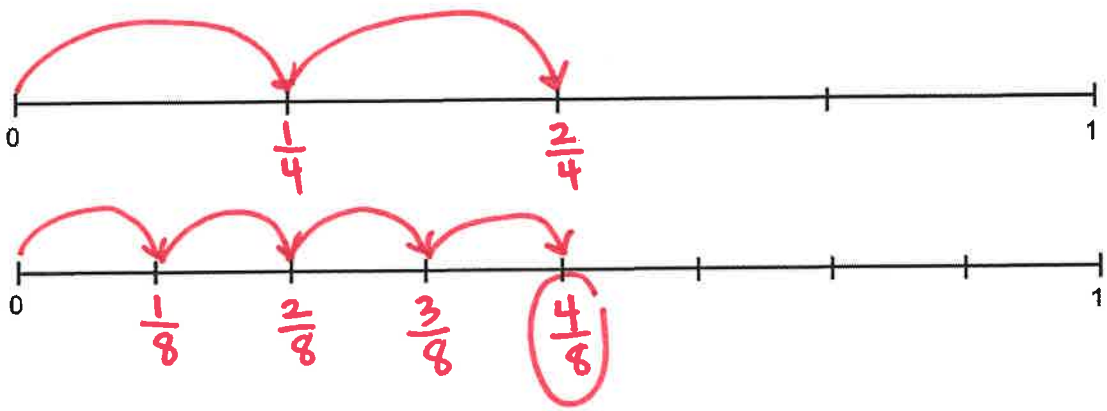


Name: ANSWER KEY

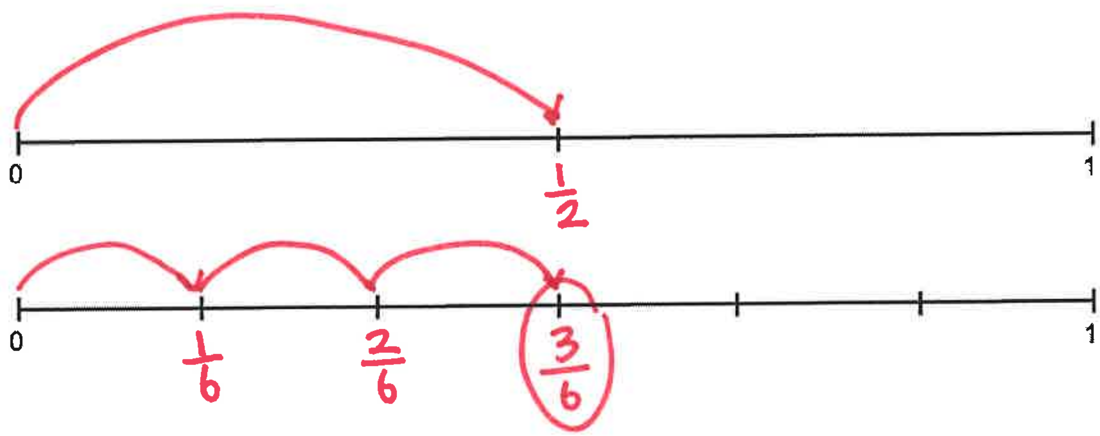
G3 U4 Lesson 12 - Let's Try It

Directions: Find the missing numerator in each equivalent pair of fractions. Use the number lines to prove the equivalency.

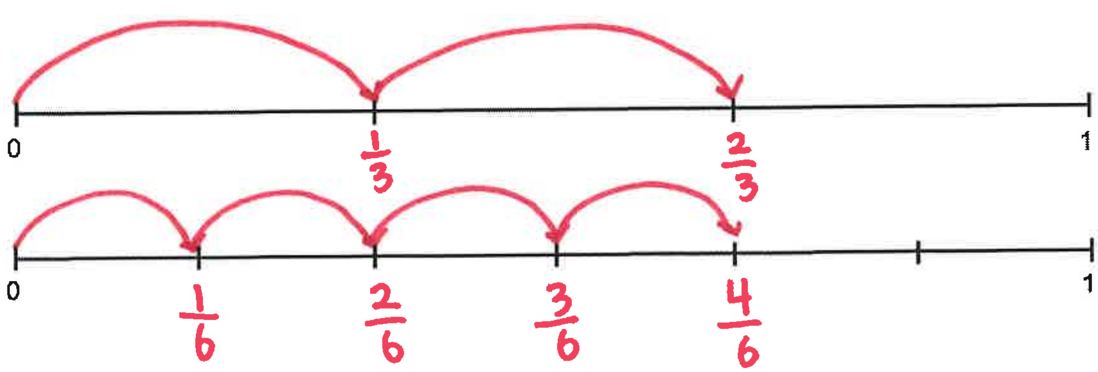
1. $\frac{2}{4} = \frac{?}{8}$? = 4



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



3. $\frac{4}{6} = \frac{?}{3}$? = 2

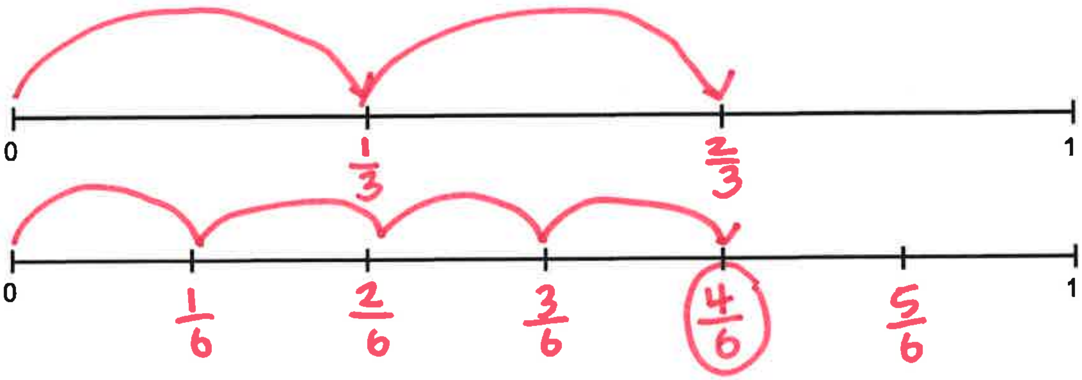


Name: ANSWER KEY

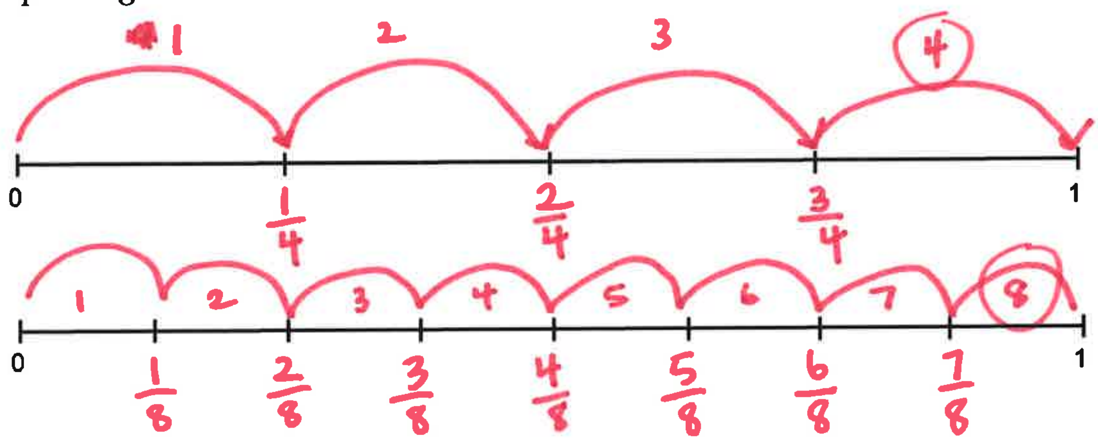
G3 U4 Lesson 12 - Independent Practice

Directions: Use the number lines below to help you solve the missing numerators to each equivalency.

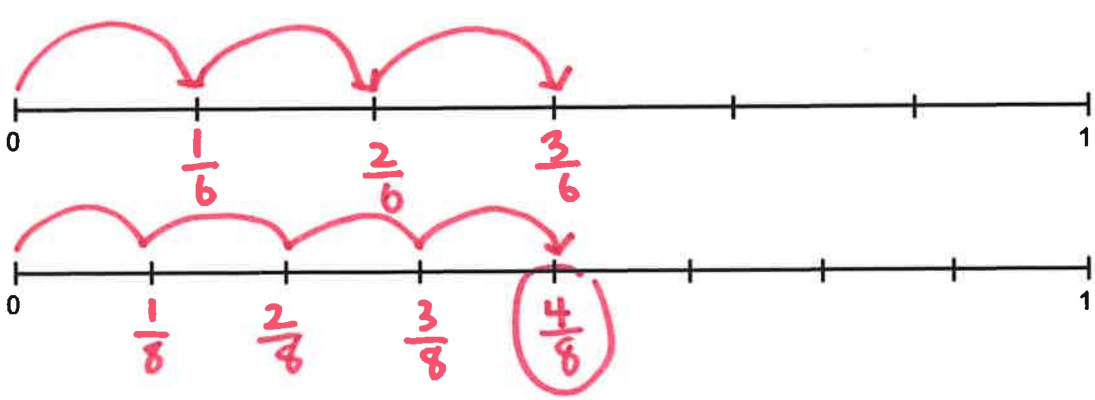
1. $\frac{2}{3} = \frac{?}{6}$? = 4



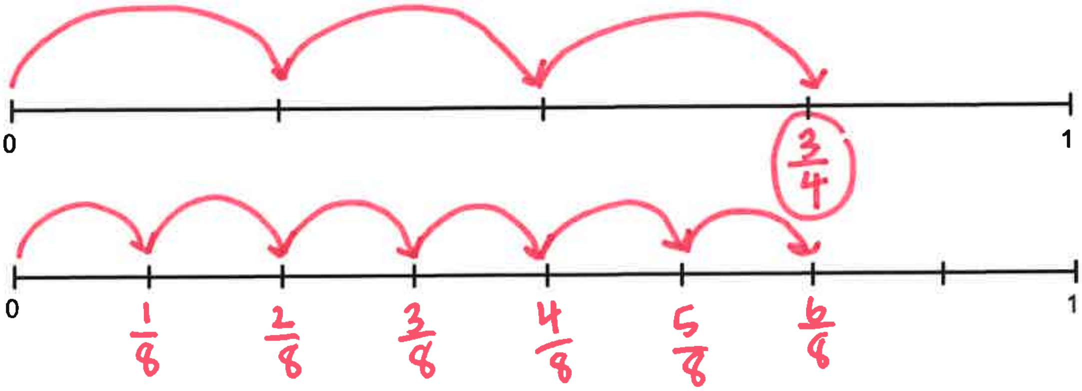
2. $\frac{4}{4} = \frac{?}{8}$? = 8



3. $\frac{3}{6} = \frac{?}{8}$? = 4

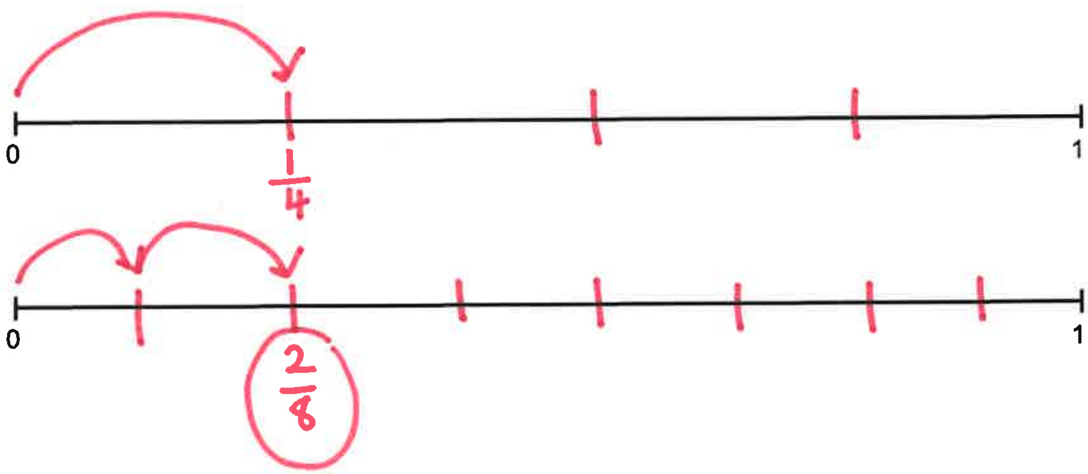


4. $\frac{6}{8} = \frac{?}{4}$? = 3



Directions: Find the missing numerator in each equivalent pair of fractions. Divide the number line to find and prove your answer.

1. $\frac{1}{4} = \frac{?}{8}$? = 2



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