Eureka Math

4th Grade
Module 4
Lesson 12

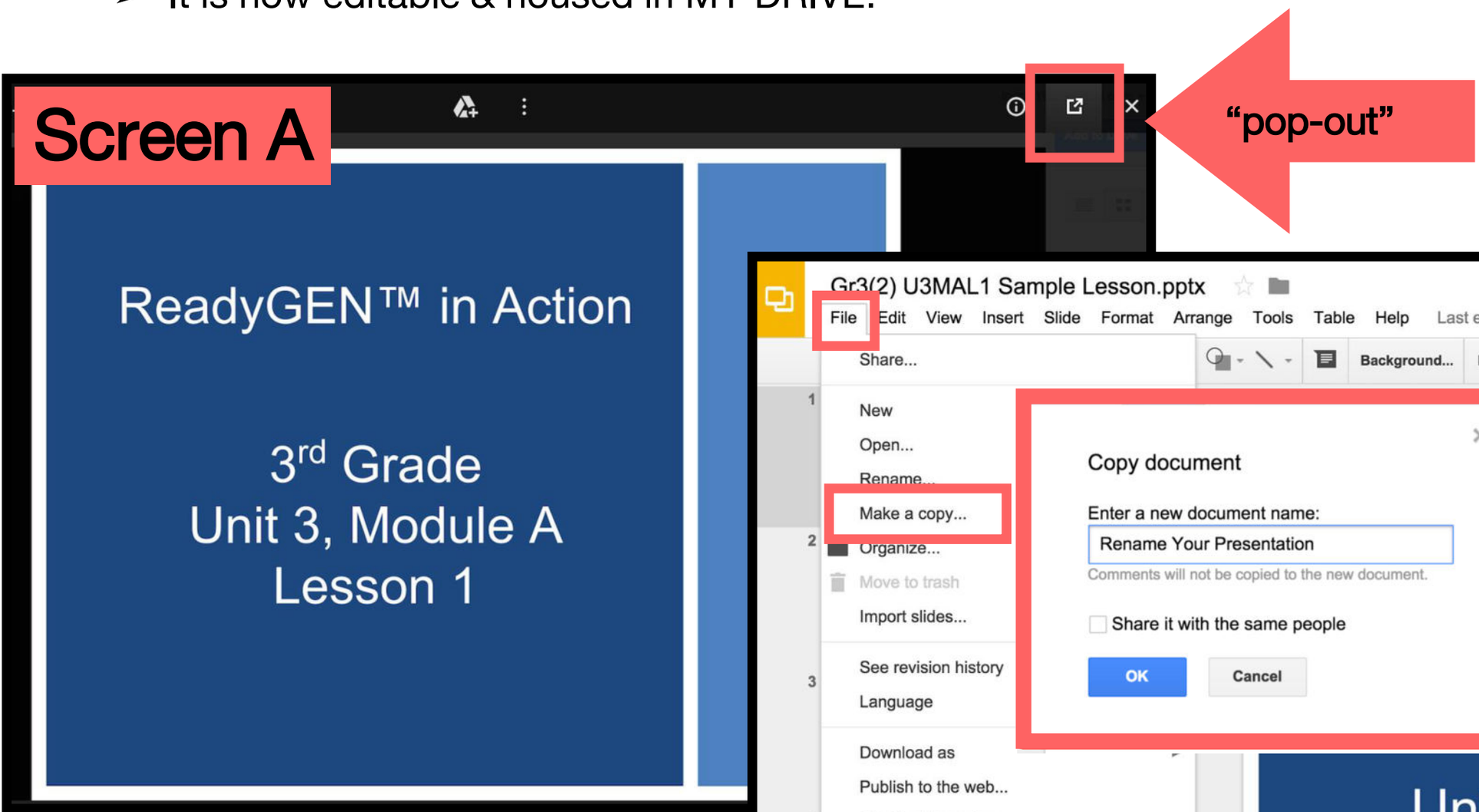
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this project!

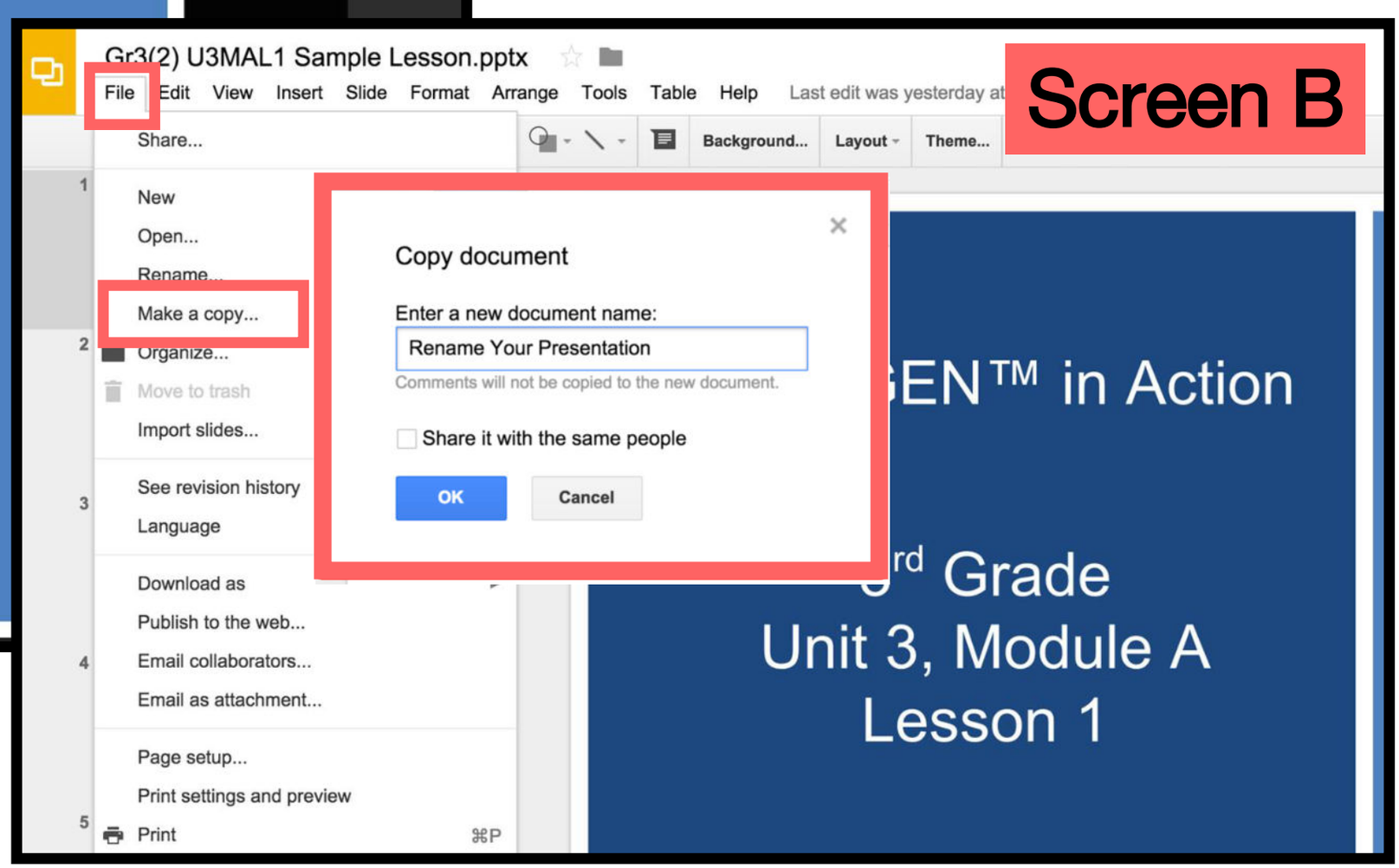
Directions for customizing presentations are available on the next slide.

Customize this Slideshow

Reflecting your Teaching Style and Learning Needs of Your Students

- When the Google Slides presentation is opened, it will look like Screen A.
- Click on the “pop-out” button in the upper right hand corner to change the view.
- The view now looks like Screen B.
- Within Google Slides (not Chrome), choose FILE.
- Choose MAKE A COPY and rename your presentation.
- Google Slides will open your renamed presentation.
- It is now editable & housed in MY DRIVE.



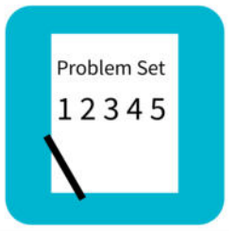


Icons

Read, Draw, Write

Learning Target

Personal White Board

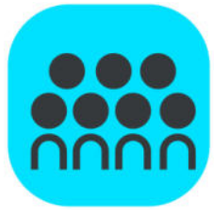


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

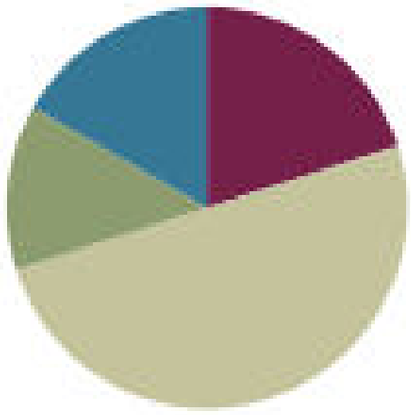
Small Group Time

Lesson 12

Objective: Reason using benchmarks to compare two fractions on the number line.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(8 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Objective: Reason using benchmarks to compare two fractions on the number line.

Add and Subtract

547 thousands 686 ones

On your personal white board, write this number in standard form.

294 thousands 453 ones

Add this number to 547,686 using the standard algorithm.

Continue the process with 645,838 + 284,567.

Add and Subtract

800 thousands

On your personal white board, write this number in standard form.

648 thousands 745 ones

Subtract this number from 800,000 using the standard algorithm.

Continue the process with 754,912 – 154,189.

Find Equivalent Fractions

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

Say the fraction.

On your personal white board, complete the number sentence to find the equivalent fraction.

Find Equivalent Fractions

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

Say the fraction.

On your personal white board, complete the number sentence to find the equivalent fraction.

Find Equivalent Fractions

$$\frac{4}{10} = \frac{\div}{\div} = \frac{}{5}$$

Say the fraction.

On your personal white board, complete the number sentence to find the equivalent fraction.

Find Equivalent Fractions

$$\frac{8}{10} = \frac{\div}{\div} = \frac{\ }{5}$$

Say the fraction.

On your personal white board, complete the number sentence to find the equivalent fraction.

Find Equivalent Fractions

$$\frac{8}{12} = \frac{\div}{\div} = \frac{}{3}$$

Say the fraction.

On your personal white board, complete the number sentence to find the equivalent fraction.

Find Equivalent Fractions

$$\frac{9}{12} = \frac{\div}{\div} = \frac{}{4}$$

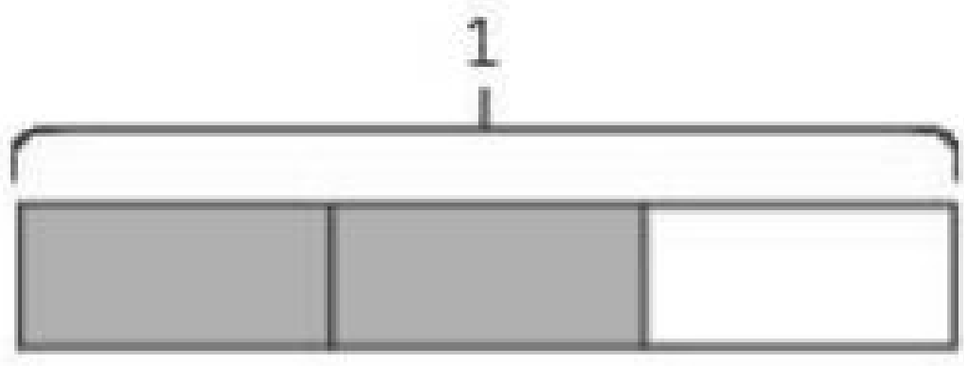
Say the fraction.

On your personal white board, complete the number sentence to find the equivalent fraction.

Construct a Number Line with Fractions

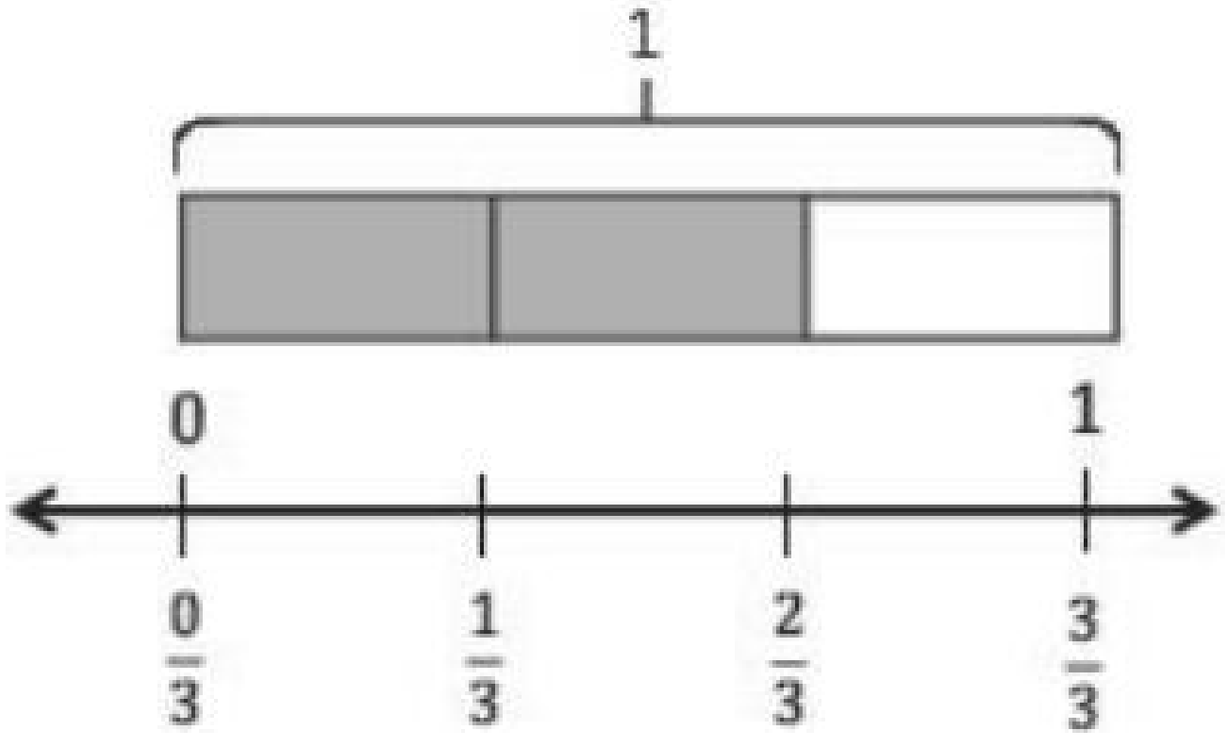
$$\frac{2}{5}$$

On your personal white board, draw a tape diagram to model the fraction. Label the number line below it.



Construct a Number Line with Fractions

Beneath your tape diagram, draw a number line. Then, label each fraction on the number line.



Construct a Number Line with Fractions

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

On your personal white board, draw a tape diagram to model the fraction. Label the number line below it.

Construct a Number Line with Fractions

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

On your personal white board, draw a tape diagram to model the fraction. Label the number line below it.

Construct a Number Line with Fractions

$$\frac{3}{6}$$

On your personal white board, draw a tape diagram to model the fraction. Label the number line below it.

Construct a Number Line with Fractions

$$\frac{6}{9}$$

On your personal white board, draw a tape diagram to model the fraction. Label the number line below it.

Application Problem

Plot $\frac{1}{4}$, $\frac{4}{5}$, and $\frac{5}{8}$ on a number line, and compare the three points.

Concept Development

Materials

- [ ] Personal white board, number line (Template)

Comparing Fractions

How many sixths equal 1 whole? Say the unit.

How many sixths equal 1 half?

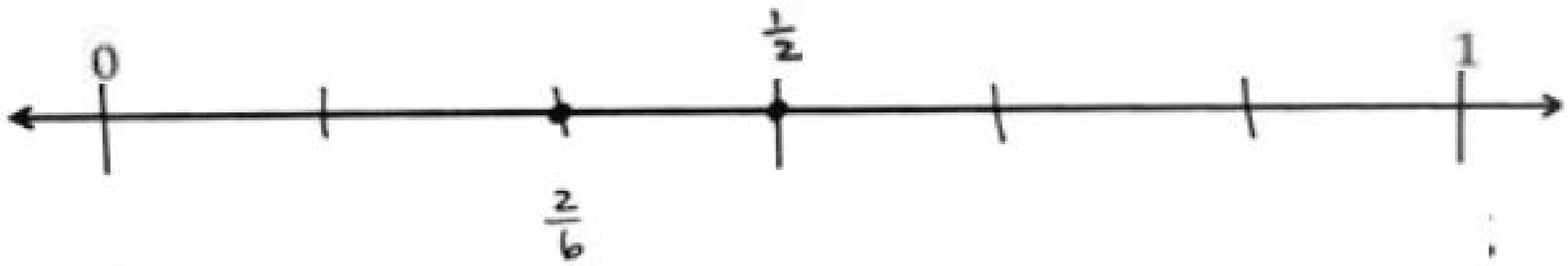
Is 2/6 greater than or less than 3/6?

Is 2/6 less than 1/2 or greater than 1/2 ?

Comparing Fractions

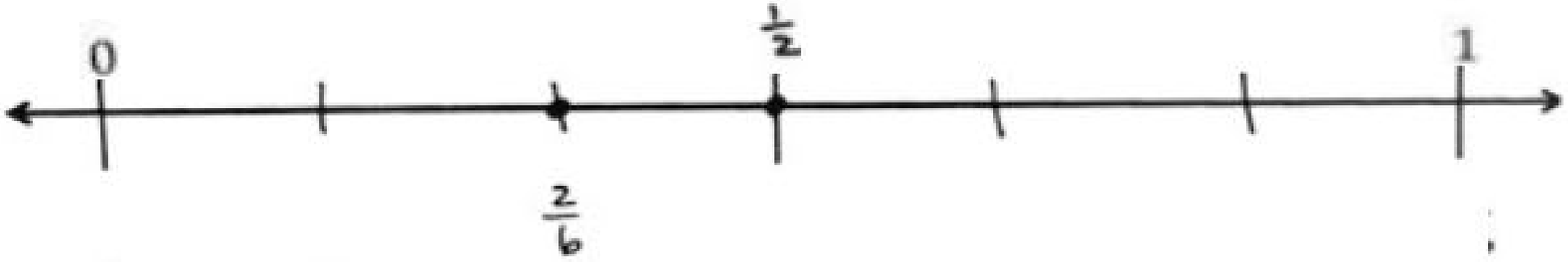
Partition the number line on the number line template to show sixths.

Label 2 sixths.



Write a number sentence comparing 2 sixths and 1 half.

Comparing Fractions



$$\frac{2}{6} < \frac{1}{2}$$

Comparing Fractions

How many eights equal 1 whole? Say the unit.

How many eights equal 1 half?

Is 5/8 greater than or less than 4/8?

Is 5/8 less than 1/2 or greater than 1/2 ?

Comparing Fractions

Partition the number line on the number line template to show eighths.

Label 5 eighths.

Write a number sentence comparing 5 eighths and 1 half.

Comparing Fractions

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

Talk to your partner. Is 2/3 greater than 1/2 or less than 1/2?

Can you model this on a number line?

Comparing Fractions

Talk to your partner. Is ⅖ greater than ½ or less than ½?

Model this on a number line and then compare ⅖ and ½

Comparing Fractions

$$\frac{5}{12}$$

What do we know about 5/12 in relation to 0, 1/2, and 1?

Comparing Fractions

$$\frac{5}{12}$$

Plot and label 5/12 on a number line. Is 5/12 closer to 0 or 1/2 ?

How close? Count the twelfths.

Comparing Fractions

7/8

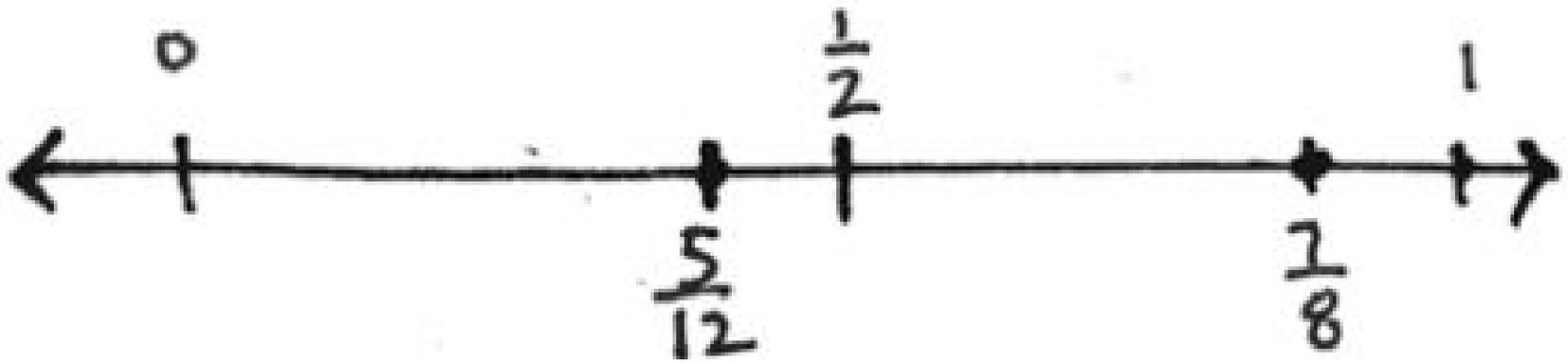
What do we know about 7/8 in relation to 0, 1/2 , and 1?

Discuss with your partner. Is 7/8 closer to 1/2 or to 1?

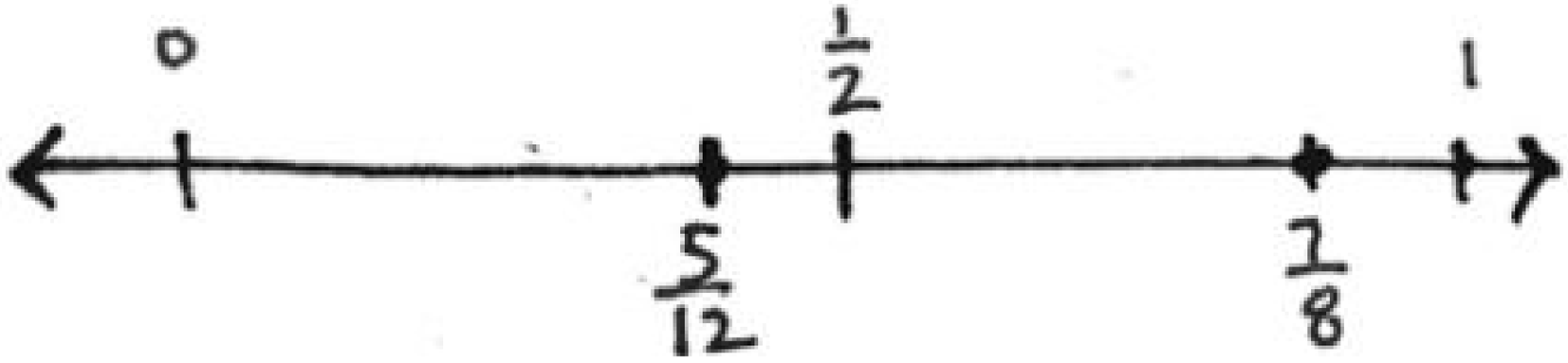
Comparing Fractions

7/8

Plot and label 7/8 on the same number line as you labeled 5/12. Write a number sentence comparing 7/8 and 5/12.



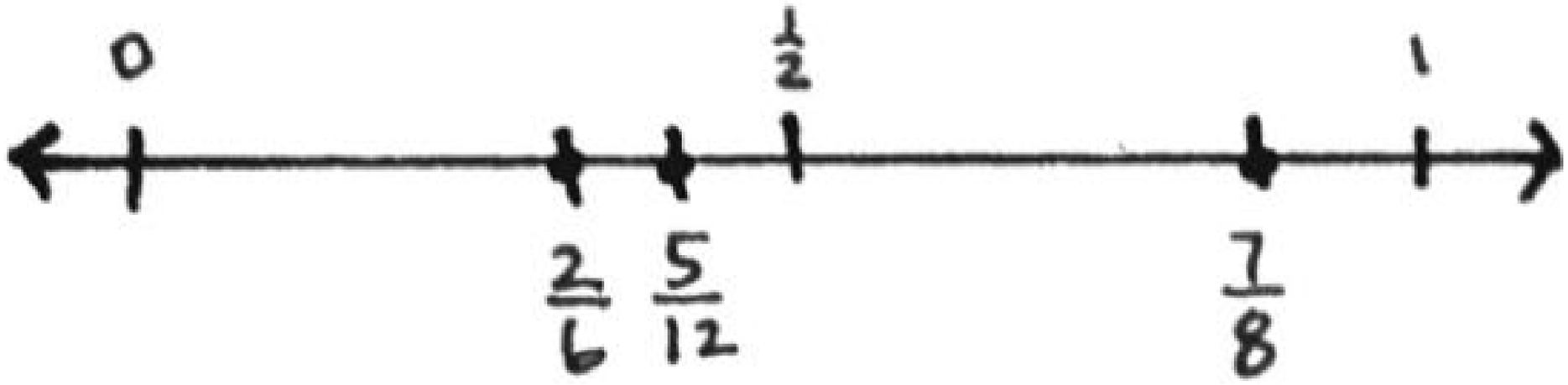
Comparing Fractions



Here is a challenge! Plot 2/6 on the same number line. Discuss with your partner the relationship 2/6 has to the other points on the number line.

Consider the size of each unit.

Comparing Fractions



We can compare the distance of a point from 1/2 based on the size of the fractional units. We can use these important locations on the number line as benchmarks to help us compare fractions.

Comparing Fractions

Talk to your partner. Compare 5/8 and 4/5 .
Consider the relationship 5/8 has to 0, 1/2 , and 1.

What about 4/5?

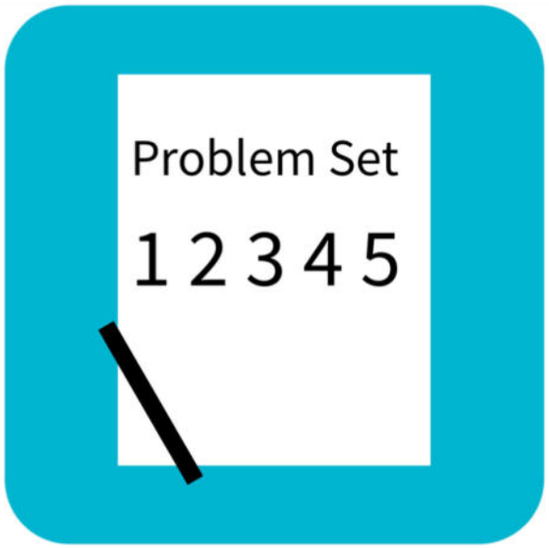
What can we conclude about 5/8 and 4/5 ?
Think about the size of the units.

Comparing Fractions

Compare 2/5 and 6/10. Again, consider the relationship 2/5 has to 0, 1/2 , and 1.

Comparing Fractions

Talk to your partner, and compare 33/100 and 2/3.

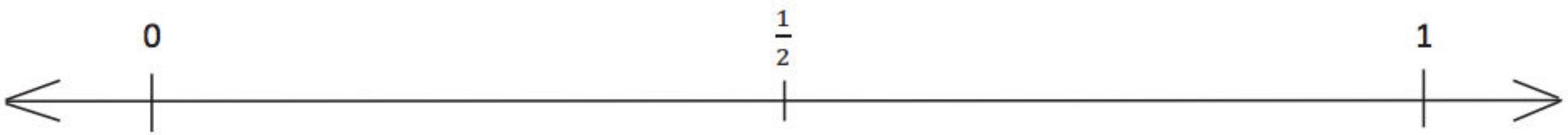


Problem Set

Name _____ Date _____

1. a. Plot the following points on the number line without measuring.

i. $\frac{1}{3}$ ii. $\frac{5}{6}$ iii. $\frac{7}{12}$



Debrief

Participate in the discussion by...

- Thinking about the question.
- Sharing your work.
- Explaining your strategy.
- Listening to others.

Debrief

- How was the number line helpful as we compared the fractions in Problem 1(b)?
- For Problem 3(a–j), explain how you used the **benchmarks** 0, $\frac{1}{2}$, and 1 to compare the fractions. When both fractions were greater than $\frac{1}{2}$, how did you know which one was greater?
- Will the strategy of using the benchmarks 0, $\frac{1}{2}$, and 1 always help us to compare two fractions? Explain.
- How did the Application Problem connect to today's lesson?

Exit Ticket

Name _____ Date _____

1. Plot the following points on the number line without measuring.

a. $\frac{8}{10}$ b. $\frac{3}{5}$ c. $\frac{1}{4}$