Eureka Math

2nd Grade
Module 8
Lesson 12

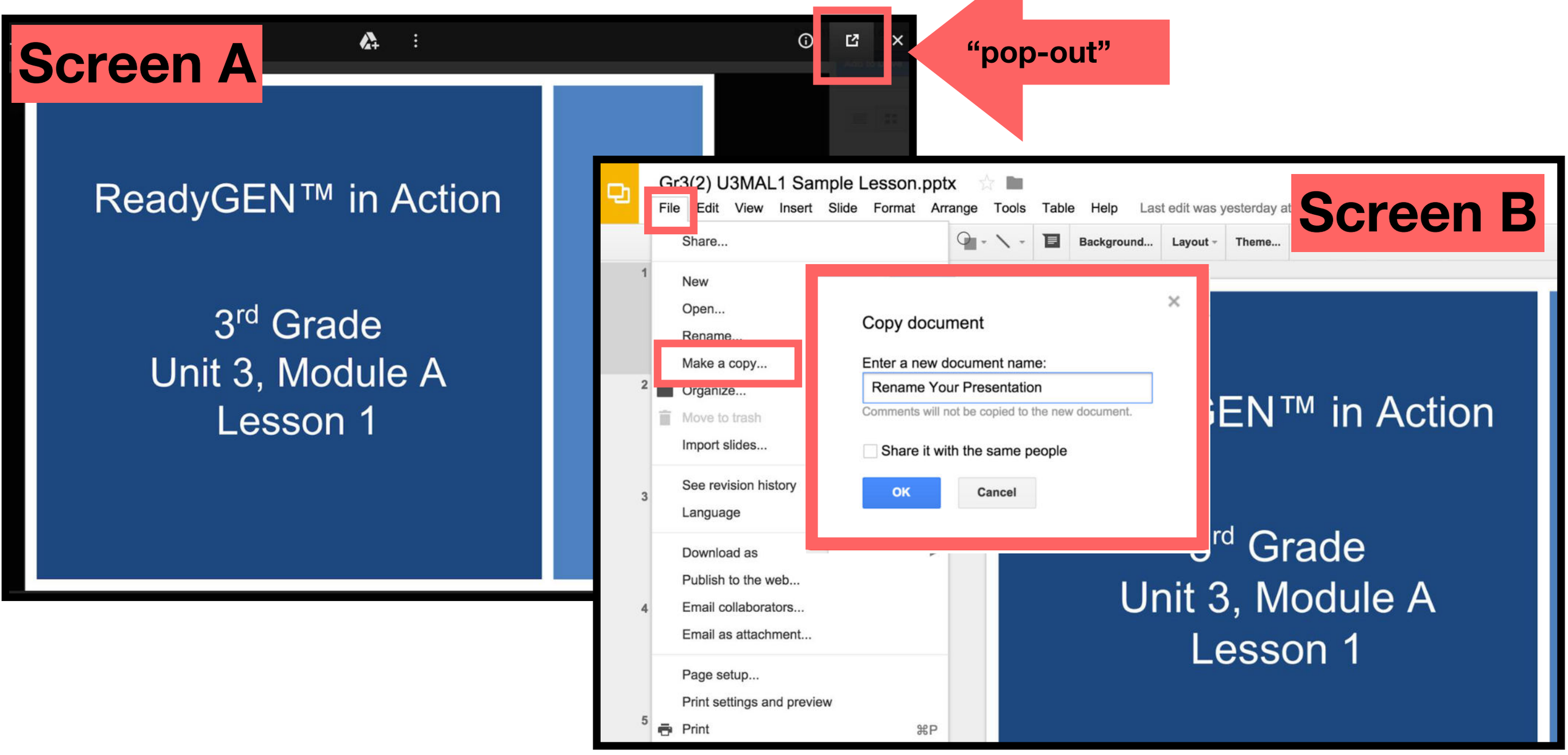
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

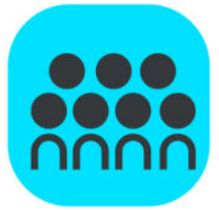
Personal White Board

Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

Small Group Time

Materials Needed:

Materials:
(S) White Board, place value chart
Fluency - Core Fluency

Concept Development:
(T) 2 equally sized construction paper squares
(S) Geoboard and 4 rubber bands, 2 construction paper squares per pair (1 pink and 1 black), 2 construction paper rectangles per pair (1 black and 1 brown), shaded half circle (Template)

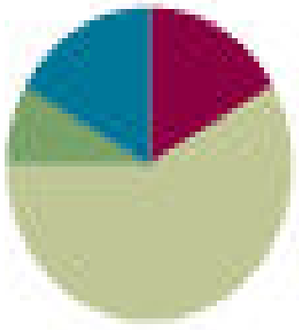
Note: Students need scissors to complete the homework.

Lesson 12

Objective: Recognize that equal parts of an identical rectangle can have different shapes.

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	(60 minutes)



I can recognize that equal parts of an identical rectangle can have different shapes.

Fluency

Addition with Renaming

Slide the place value chart template into your personal white board.

234 + 266 Let's use a chip model to add. On your personal white board, record your work using the vertical method.

195 + 235

212 + 189

Sprint

Name _____ Date _____

1.	10 + 9 =	21.	3 + 9 =
2.	10 + 1 =	22.	4 + 8 =
3.	11 + 2 =	23.	6 + 9 =
4.	13 + 6 =	24.	8 + 8 =
5.	15 + 5 =	25.	7 + 5 =
6.	14 + 3 =	26.	5 + 8 =
7.	13 + 6 =	27.	8 + 3 =

Application Problem

Tugu made two pizzas for himself and his 5 friends to share. He wants everyone to have an equal share of the pizza. Should he cut the pizzas into halves, thirds, or fourths?

Concept Development

Part 1: Dividing a Shape into Equal Parts in More Than One Way

This is a whole square. Student A, come up and partition, or divide, the square into halves.

Thumbs up if you agree with Student A. Good. 2 halves make…?

Concept Development

Part 1: Dividing a Shape into Equal Parts in More Than One Way

Here is another whole square that is the same size. Watch as I partition this square into halves.

Turn and talk: Is the square split into halves?

This square is split into halves because there are two triangles that are the exact same size.

Concept Development

Use your geoboard and one rubber band to create the biggest square possible.

This is one whole. Work with your partner to see how many different ways you can show 2 halves.

Now, use the same geoboard square to show fourths. Again, work with your partner to find at least two ways to show your square split into fourths.

Show me the last way you divided your square on your geoboard. Are all of your fourths the same shape?

Concept Development

Equal shares can have different shapes. What were some of the shapes you discovered?

Let’s take a look at some equally sized rectangles on our Problem Set. Look at Problem 1.

Draw lines to show equal halves, thirds, and fourths of a whole rectangle.

Concept Development

Part 2: Proving the Equality of Halves with Different Shapes

Let's use paper squares to show halves in two different ways. First, how can we tell if your square is the same size as your partner's?

Do that to prove that they are the same size.

If you have a pink square, fold to make triangular halves. If you have a black square, fold to make rectangular halves. Draw a line on the fold.

.

Concept Development

We want to know if the way each of these squares is divided shows halves, two equal pieces of equally sized squares.

Cut each square into halves.

What do you notice about the halves we cut from each square?

Do these pieces show half of the same-sized square even though they are different shapes?

Concept Development

Watch as I cut the triangle into fourths. I'm going to see if the triangle half fits on top of the rectangle half to see if they are the same.

You try it.

How do we know the triangle half is the same as the rectangle half?

Look at Problem 2 on your Problem Set. Build the original whole square using the rectangle half and the half represented by your four small triangles. Draw it in the space below.

Concept Development

Part 3: Creating Multiple Shapes Using Equal Shares

Let's use the halves of our paper squares to make new shapes. Here are some brown rectangular halves. Each partner should have a brown half and a black half.

Make a different polygon out of your rectangular halves.

Tell your partner what polygon you made.

Concept Development

How did the square change?

What part stayed the same?

Even though we moved the halves around to make a new polygon, the shares still show equal halves.

Now, cut each equal part in half, and move them to form a new polygon.
What fraction of the whole is one part now?

Concept Development

What changed when we switched from halves to fourths?

What stayed the same?

We cut up the square into halves and then fourths, but the new polygon was made from the original square. Can you still see the square in your head? Could you move the pieces back so it looks like the square again?

You will all get a chance to do this with a square and a circle from the Problem Set.

Name _____ Date _____

1. Partition the rectangles in 2 different ways to show equal shares.

a. 2 halves

b. 3 thirds

Debrief

Review your solutions for the Problem Set

Problem 1(c).) If you split two rectangles of the same size into fourths and make four triangles or four rectangles, which fourth is bigger?

For Problem 1, if you were to cut out your equal shares in the left-hand column and rearrange them, would they fit on top of the equal shares in the right-hand column? Why?

For Problem 4, share your drawing with your partner. How many equal shares do you have? What fraction is shaded? When you rearranged your circles to create a new shape, what fraction was shaded?

Debrief

Review your solutions for the Problem Set

If you split two rectangles in half, will the halves always have the same shape? What must the rectangles have in common first?

If I moved these halves, could I make a triangle? How is it possible that this triangle takes up the same amount of space as this rectangle?

Exit Ticket

Name _____ Date _____

Partition the rectangles in 2 different ways to show equal shares.

1. 2 halves

2. 3 thirds