Eureka Math

3rd Grade
Module 7
Lesson 32

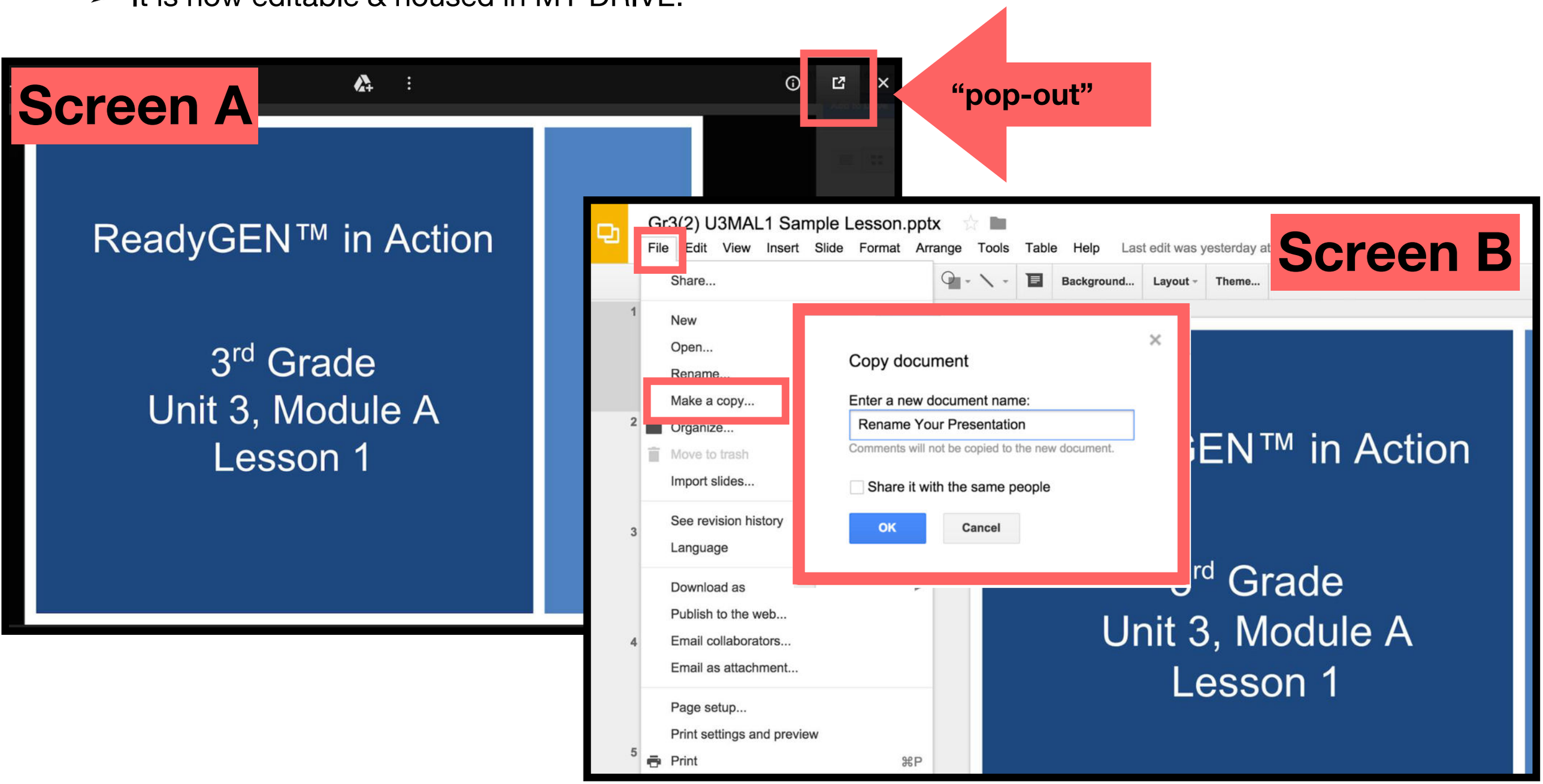
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

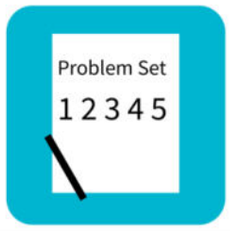


Icons

Read, Draw, Write

Learning Target

Personal White Board

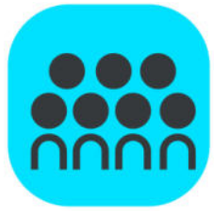


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

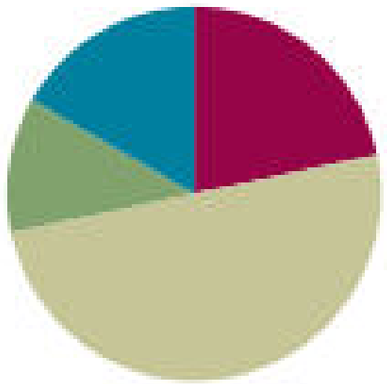
Small Group Time

Lesson 32

Objective: Explore and create unconventional representations of one-half.

Suggested Lesson Structure

Fluency Practice	(13 minutes)
Application Problem	(7 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can explore and create unconventional representations of one-half.

Fluency Practice

Sprint: Mixed Multiplication (10 minutes)

Number Correct: _____

A

Mixed Multiplication

1.	2 × 1 =	
2.	2 × 2 =	
3.	2 × 3 =	
4.	4 × 1 =	
5.	4 × 2 =	
6.	4 × 3 =	
7.	1 × 6 =	
8.	2 × 6 =	
9.	1 × 8 =	
10.	2 × 8 =	
11.	3 × 1 =	
12.	3 × 2 =	
13.	3 × 3 =	
14.	5 × 1 =	
15.	5 × 2 =	
16.	5 × 3 =	
17.	1 × 7 =	
18.	2 × 7 =	
19.	1 × 9 =	

23.	2 × 7 =	
24.	5 × 5 =	
25.	5 × 6 =	
26.	5 × 7 =	
27.	4 × 5 =	
28.	4 × 6 =	
29.	4 × 7 =	
30.	3 × 5 =	
31.	3 × 6 =	
32.	3 × 7 =	
33.	2 × 7 =	
34.	2 × 8 =	
35.	2 × 9 =	
36.	5 × 7 =	
37.	5 × 8 =	
38.	5 × 9 =	
39.	4 × 7 =	
40.	4 × 8 =	
41.	4 × 9 =	

Fluency Practice

Divide (4 minutes)

Write each division sentence.
Then fill in with the missing quotient.

10 ÷ 2 = ___

4 ÷ 2 = ___

8 ÷ 4 = ___

15 ÷ 3 = ___

24 ÷ 4 = ___

45 ÷ 9 = ___

63 ÷ 7 = ___

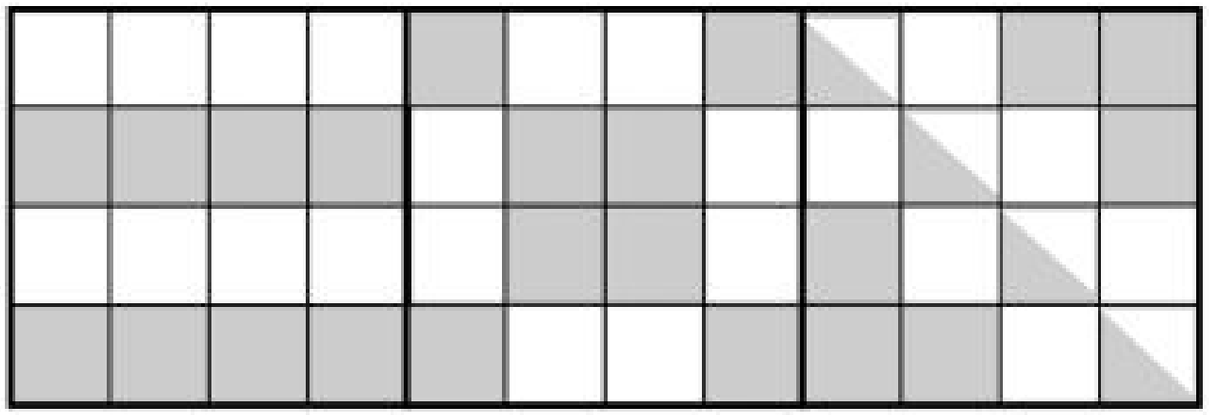
56 ÷ 8 = ___

Application Problem

(7 minutes)

Application Problem (7 minutes)

Hannah traces square-inch tiles to draw 3 larger squares. She draws the 3 large squares side by side to make a rectangle. She shades one-half of each larger square, as shown.



a. Do you agree that all 3 squares are one-half shaded? Explain your answer.

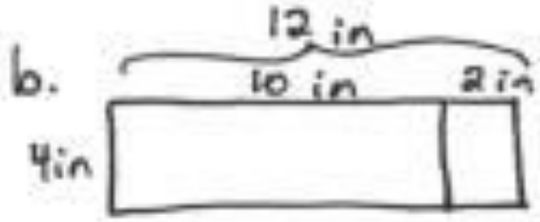
b. What is the area of the rectangle?

c. What is the total area of the shaded space?

Application Problem

a. Yes, I agree that all 3 squares are one-half shaded. Each square has an area of 16 sq in and each square has a total of 8 sq in shaded. 8 is one-half of 16.

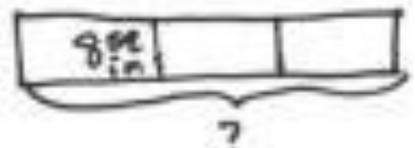
b.



$A = 4 \text{ in} \times (10 \text{ in} + 2 \text{ in})$
$= (4 \text{ in} \times 10 \text{ in}) + (4 \text{ in} \times 2 \text{ in})$
$= 40 \text{ sq in} + 8 \text{ sq in}$
$= 48 \text{ sq in}$

The area of the rectangle is 48 square inches.

c. Area of shaded space of 1 square = 8 sq in



$A = 3 \times 8 \text{ sq in}$
$= 24 \text{ sq in}$

The area of the shaded space is 24 square inches.

Concept Development

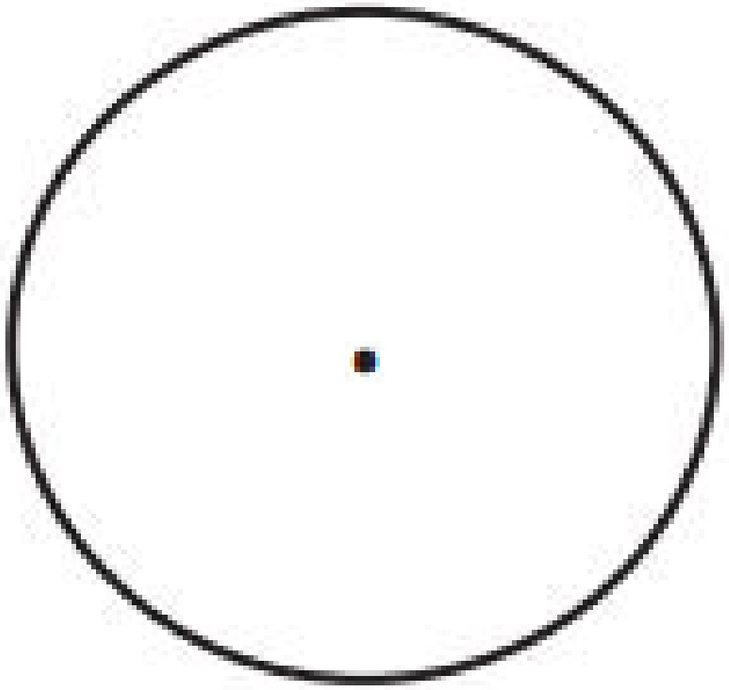
(30 minutes)

Materials: (T) Completed page 1 sample of Problem Set (analyzing tool) (S) Circles with dots (Template), ruler, crayons, scissors, Problem Set

Let’s represent one-half using our circles.

They don’t have a grid like yesterday’s squares did.

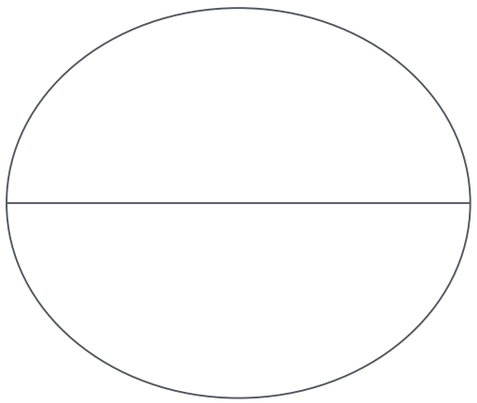
Talk with your partner about what tools or strategies you might use to help you be precise as you show one-half.



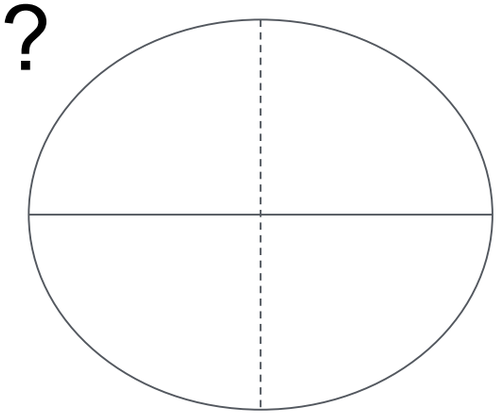
Concept Development

(30 minutes)

Go ahead and fold one circle to estimate one-half now.



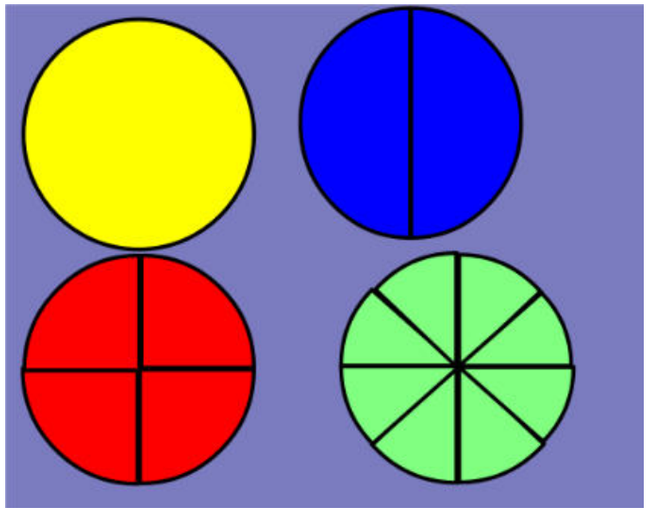
Take your second circle. Fold it in half, and then fold it in half again. (Model.) Open your circle. What fractional unit did you divide your circle into?



Why might fourths be useful for representing one-half?

Fold your fourths back up, and then fold the circle in half for a third time. What fractional unit is your circle divided into now? Let's use our pencil to lightly shade in the fourths to show one half.

Talk to your partner about how that increases the possibilities for showing one-half.



Besides folding your circle into different fractional units, how else could you get creative about the way you show one-half with your circle?

Use folding and other ideas to create different, creative representations of one-half.

We want to look at our circles. Lay them out on your table and we are going to have a Gallery Walk to make sure all of the folds we made were halves.

Do all of our circles represent exactly one-half? Talk with your partner. Why or why not?

Sometimes we estimated our circles, so let's say:

"Our circles show representations of about one half."

- Present your circles to a small group and explain how they know they shaded about one-half of their circles.
- Feel free to correct any mistakes you made.
- Use crayons to color over your pencil shading.

Optional: Combine all the finished circles to form a class quilt to display the various representations of one-half.

Problem Set (10 mins.)

Name _____ Date _____

1. Look at the circles you shaded today. Glue a circle that is about one-half shaded in the space below,

   a. Explain the strategy you used to shade in one-half of your circle.

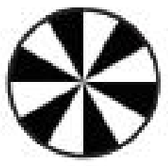
   b. Is your circle exactly one-half shaded? Explain your answer.

2. Julian shades 4 circles as shown below.

Circle A

Circle B

Circle C



Circle D

   a. Write the letters of the circles that are about one-half shaded.

Debrief

Share answers to Problem 1(b). Were any of the circles that we made today exactly one-half shaded? How do you know?

Look at Circle A in Problem 2. Is it one-half shaded? How do you know?

What do we have to think is true about the small black and white circles? About the black and white swirls? Why?

Compare the circle you shaded in Problem 3 to a partner's. How are they the same? How are they different?

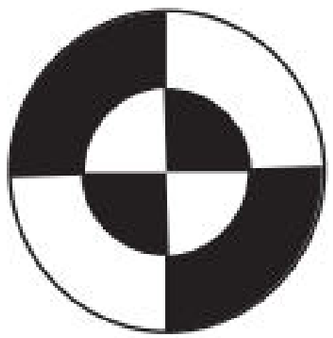
How was the shading we did with circles similar to the shading we did with rectangles? How was it different?

Why do you think it's helpful to explore different representations of one-half?

Exit Ticket (3 minutes)

Name _____ Date _____

Riddian shades a circle as shown below.



1. Is Riddian's shape about one-half shaded? How do you know?

2. Estimate to shade about one-half of the circle in an unusual way.