Materials List:

- Multiply by 7 Pattern Sheet
- 2" square on cardstock
- Scissors
- Tape
- Crayons
- Black markers
- Red markers
- White String
- Workbook

Eureka Math

3rd Grade
Module 7
Lesson 10

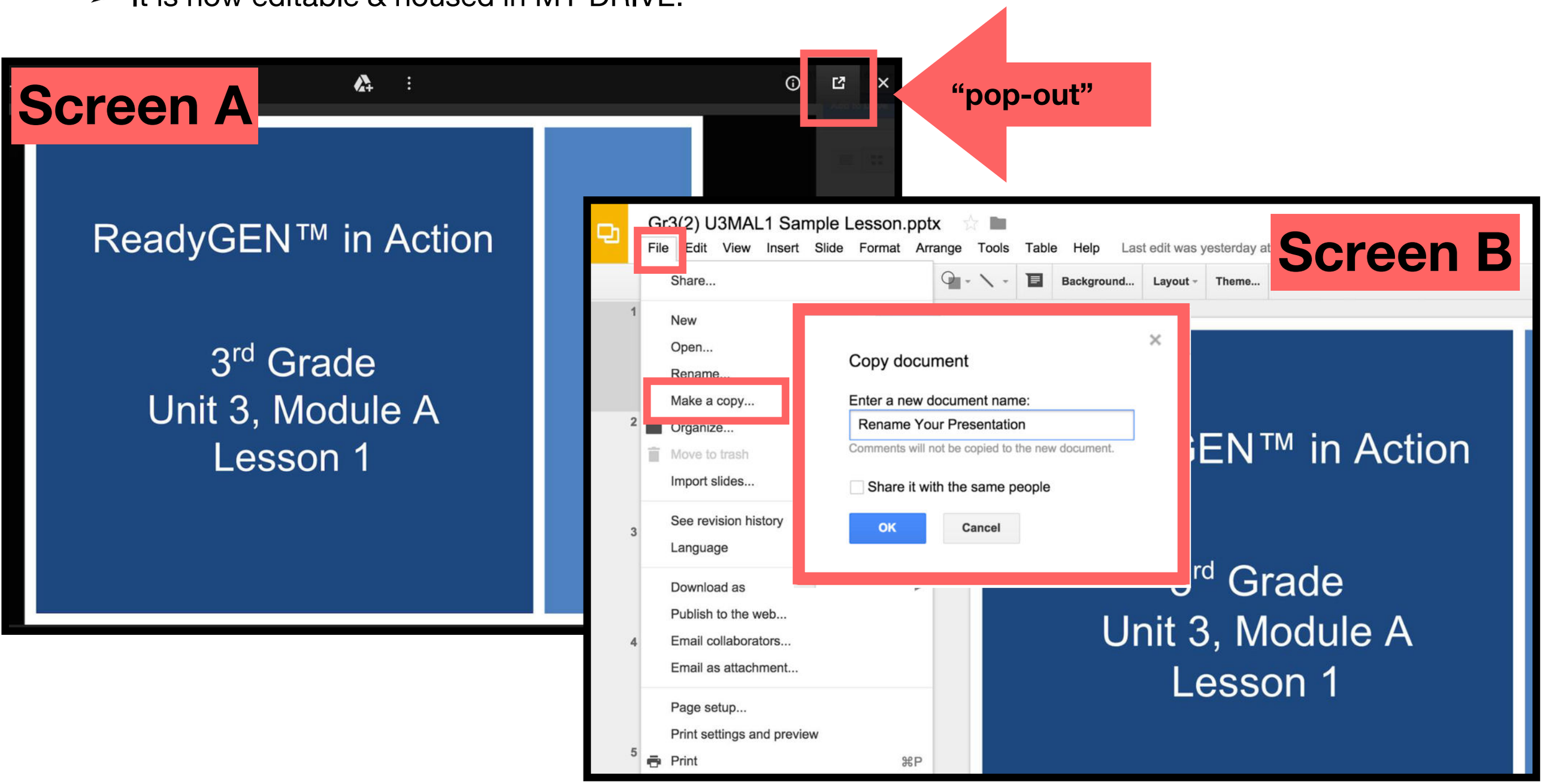
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

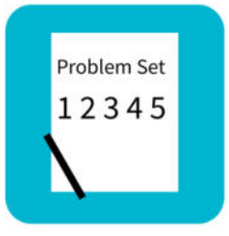


Icons

Read, Draw, Write

Learning Target

Personal White Board

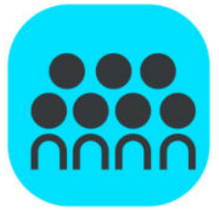


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

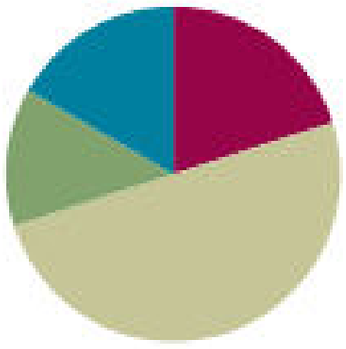
Small Group Time

Lesson 10

Objective: Decompose quadrilaterals to understand perimeter as the boundary of a shape.

Suggested Lesson Structure

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



I can decompose quadrilaterals to understand perimeter as the boundary of a shape.

Fluency Practice

Multiply by 7 (5 minutes)

Skip count to find the answer.

5x7=

7, 14, 21, 28, 35

3x7 =

7, 14, 21

Start at 35 and count back down by sevens.

35, 28, 21, 14, 7

Fluency Practice

Pattern Sheet (3 minutes)

Multiply

7 x 1 = _____	7 x 2 = _____	7 x 3 = _____	7 x 4 = _____
7 x 5 = _____	7 x 1 = _____	7 x 2 = _____	7 x 1 = _____
7 x 3 = _____	7 x 1 = _____	7 x 4 = _____	7 x 1 = _____
7 x 5 = _____	7 x 1 = _____	7 x 2 = _____	7 x 3 = _____
7 x 2 = _____	7 x 4 = _____	7 x 2 = _____	7 x 5 = _____
7 x 2 = _____	7 x 1 = _____	7 x 2 = _____	7 x 3 = _____
7 x 1 = _____	7 x 3 = _____	7 x 2 = _____	7 x 3 = _____

Fluency Practice

Equivalent Counting with Units of 2 (4 minutes)

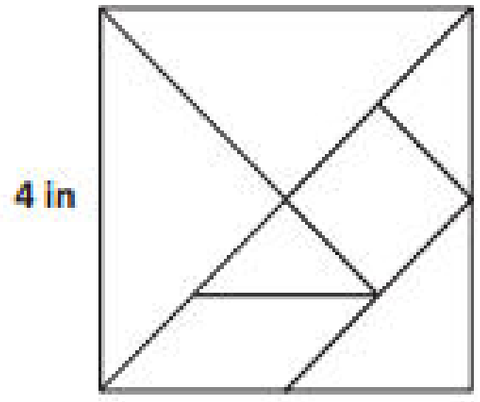
Count by twos to 20.

2	4	6	8	10	12	14	16	18	20
1 two	2 twos	3 twos	4 twos	5 twos	6 twos	7 twos	8 twos	9 twos	10 twos

Application Problem

(8 minutes)

Trista uses all seven of her tangram pieces to make a square as shown. One side of the large square is 4 inches long. What is the total area of the two large triangles? Explain your answer.



Area of the Square:

4 in x 4 in = 16 sq in

Area: 16 sq in

Area of the 2 large triangles:

16 sq in ÷ 2 = 8 sq in

Area = 8 sq in

The total area of the 2 large triangles is 8 sq in. I know the 2 triangles make up half of the square. I found the area of the square and divided it by 2.

Concept Development

Problem 1: Decompose a square to define perimeter

Trace your 2-inch square in Problem 1(a) of the Lesson 10 Problem Set with a red crayon.

Work with your partner to wrap the string around the outside edges of your square.

Partner A, hold the string in place. Partner B, use the black marker to mark the string where it meets the end after going all the way around once.

Switch roles to help your partner mark his string.

Concept Development

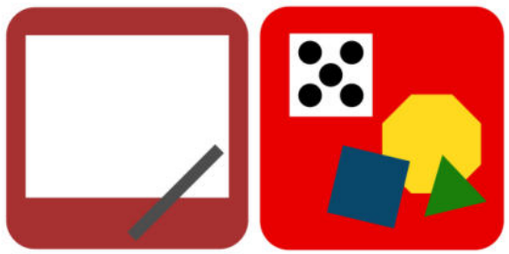
Problem 1: Decompose a square to define perimeter

Set your string aside. Draw a path from the top right-hand corner of the square to the bottom right-hand corner. Be creative! Your path shouldn’t be straight, but you will cut along it. Keep that in mind as you draw.

Carefully cut along your path.

Use your finger to trace around the edge of the piece you cut out. We call the boundary of the shape its perimeter. Say the word to yourself as you trace.

Slide the piece that you cut out to the opposite side of your square. Line up the straight edge of the piece that you cut out with the edge of the square. Tape the pieces together, making sure that there aren’t any gaps.



Concept Development

Problem 1: Decompose a square to define perimeter

What happened to the perimeter of the shape you cut out?

Work with a partner to wrap your string around your new shape. This time, use the red marker to mark the string where it meets the end after going all the way around once. Then, switch roles so your partner can mark her string.

Concept Development

Problem 1: Decompose a square to define perimeter

The marks on your string represent the perimeters of the square and your new shape. Talk to a partner. Compare the perimeters of the square and your new shape.

Did the area of the square change when you made your new shape? Talk to a partner.

Follow the directions to complete Problem 1(b–g) on your Problem Set.

Which color in Problem 1 (a) and (b) represents the perimeter of the shapes? What does the color blue represent?

Problem Set (5 minutes)

Problem #1 is done whole group.

1. Use a 2-inch square to answer the questions below.

   a. Trace the square in the space below with a red crayon.

   b. Trace the new shape you made with the square in the space below with a red crayon.

Debrief (10 minutes)

- Does the shape you drew in Problem 1(a) have the same perimeter as the shape your partner drew for Problem 1(a)? How do you know?
- Use your string to compare the perimeter of your new shape to your partner's. Whose shape has a greater perimeter?
- How do you know? How is area different from perimeter? Why did the perimeter of the shape change but the area stay the same?
- Explain to a partner how you could use your piece of string to figure out which shape has the greatest perimeter in Problem 2.

Exit Ticket (3 minutes)

Jason paints the outside edges of a rectangle purple. Celeste paints the inside of the rectangle yellow.

1. Use your crayons to color the rectangle that Jason and Celeste painted.

2. Which color represents the perimeter of the rectangle? How do you know?