Eureka Math

4th Grade
Module 6
Lesson 1

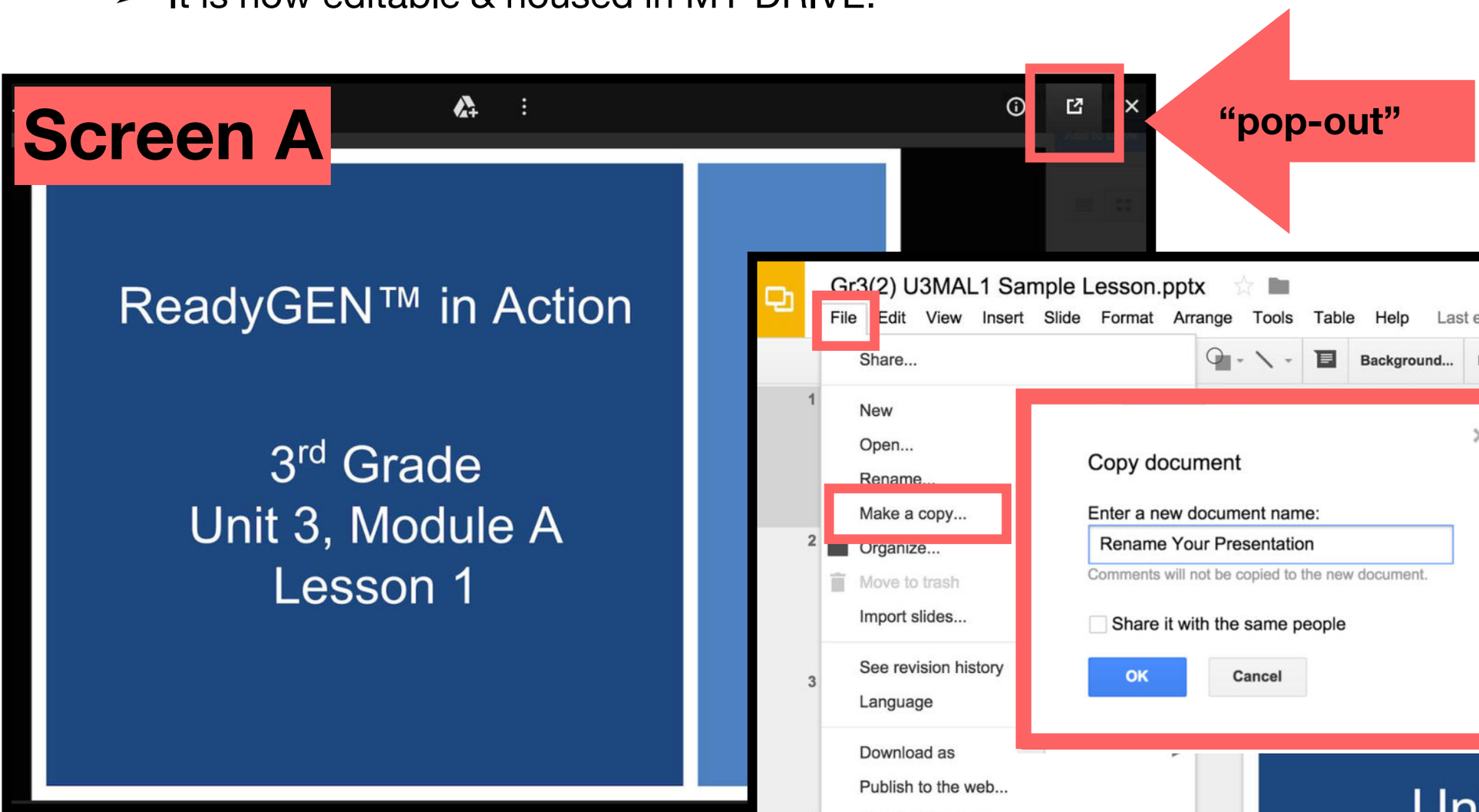
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

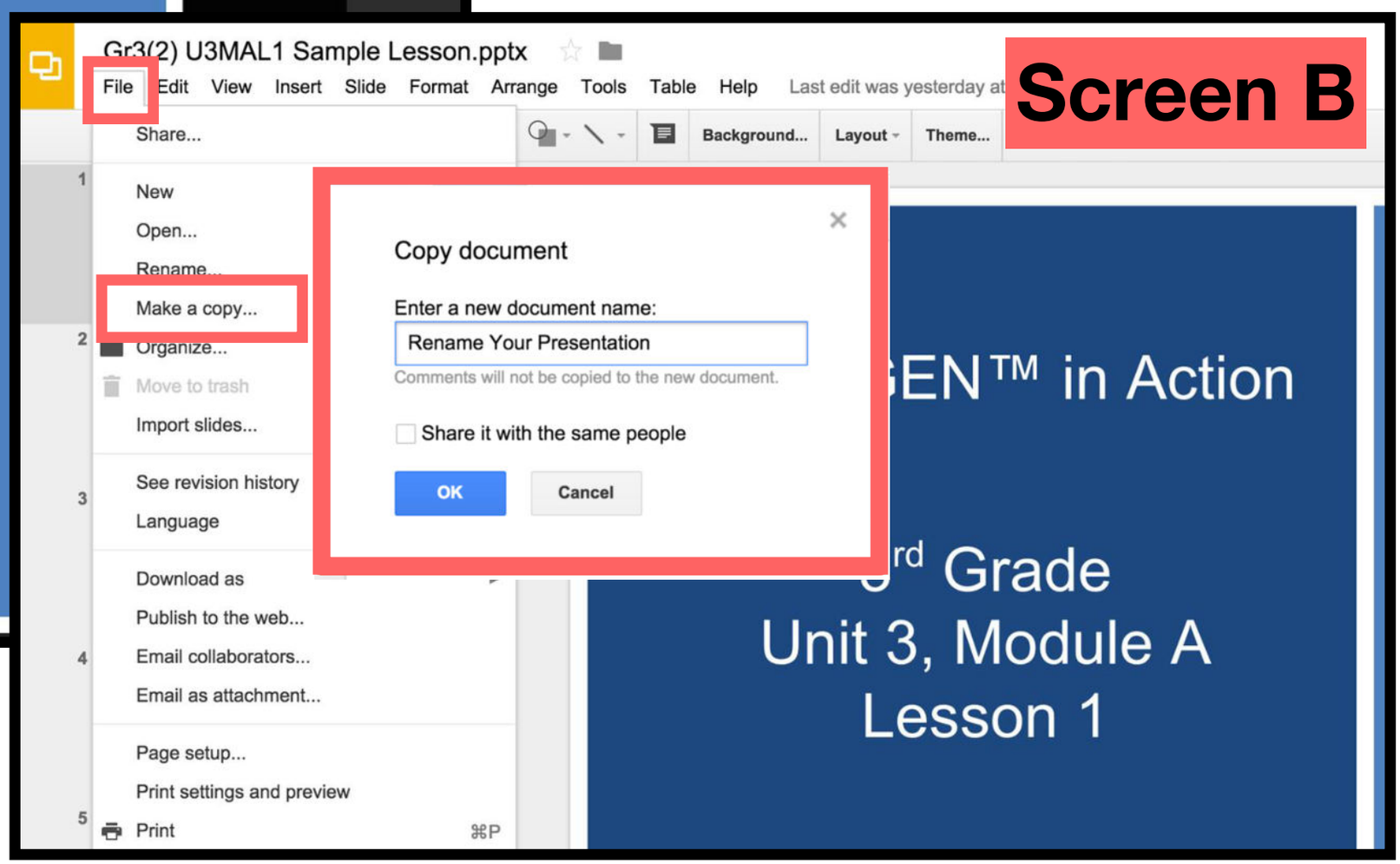
Directions for customizing presentations are available on the next slide.

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.



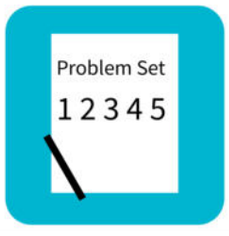


Icons

Read, Draw, Write

Learning Target

Personal White Board

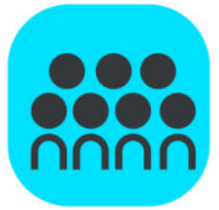


Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

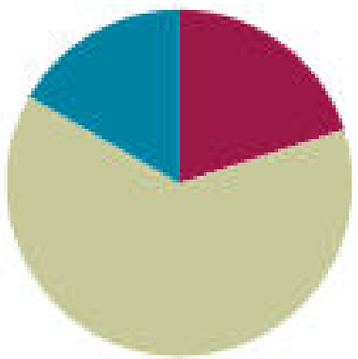
Small Group Time

Lesson 1

Objective: Use metric measurement to model the decomposition of one whole into tenths.

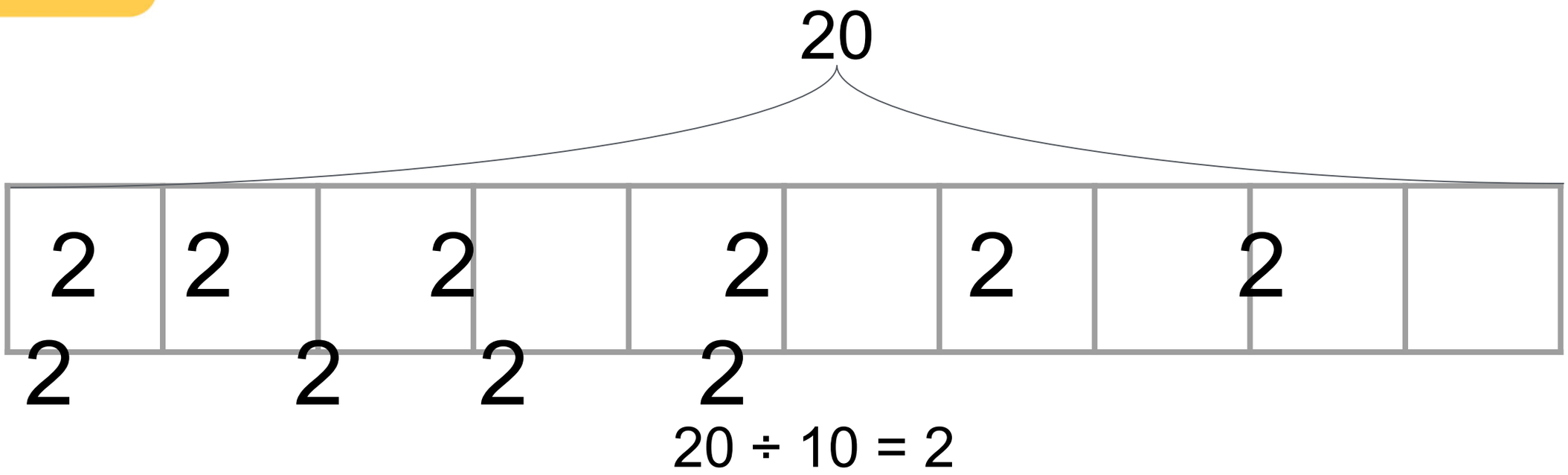
Suggested Lesson Structure

Fluency Practice	(12 minutes)
Concept Development	(38 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Use metric measurement to model the decomposition of one whole into tenths.

Divide



20 ÷ 10 = 2

Say the whole.

How many units is 20 divided into?

Say the division sentence.

Sprint

Put your name on side A.

Hold your pencil in the air to show you are ready.

When your teacher says, “Go”, begin solving.

Keep working to solve as many problems as you can.

When your teacher says, “Stop”, stop answering problems and hold your pencil in the air.

Listen and check your work as your teacher reads the correct answers.
Count how many problems you answered correctly and write them in the circle.

Follow the same steps for side B. On side B, try to solve more problems than you did on side A.

Materials:(T)
10 0.1-kilogram bags of rice, digital scale, 1-meter strip of paper, sticky notes, meter stick
(S) Meter stick (per pair), blank meter strip of paper, centimeter ruler, markers or crayons, blank paper

Note: In preparing this lesson's materials, consider the following. If a digital scale is not available, a pan balance can be used with 100-gram weights labeled as 0.1 kg. Cash register tape can be used to make meter strip papers. During Activity 2, use sticky notes to label each of the 10 1-meter strips of paper with one number:
0.1 m, 0.2 m, 0.3 m, ...,1.0 m.

Compose and Decompose

Here are 10 equal bags of rice.

Together, all of this rice weighs 1 kilogram.

Let’s draw a tape diagram to show the total amount of rice. Draw the tape as long as you can on your blank paper.

What is our total amount?

Compose and Decompose

Let’s write 1 kg above the tape diagram to show that the whole tape represents 1 kilogram.

How can we represent the 10 equal bags on the tape diagram?

Partition your tape diagram to show 10 equal parts.

Each of these parts represents what fraction of the whole?

Compose and Decompose

What fractional part of 1 kilogram is 1 bag?

Point to the part this 1 bag represents on your tape diagram.

Let’s write the weight of this bag on your tape diagram.

What is the weight of 1 bag?

Compose and Decompose

What is the weight of 2 bags?

What is the weight of 3 bags?

What is the weight of 4 bags?

What is the weight of 5 bags?

What is the weight of 6 bags?

Compose and Decompose

What is the weight of 7 bags?

What is the weight of 8 bags?

What is the weight of 9 bags?

What is the weight of 10 bags?

Compose and Decompose

Let’s make a number line the same length as the tape diagram, and mark the tenths to match the parts of the tape diagram. Label the endpoints 0 and 1.

Let’s see what 1/10 kilogram looks like on the scale.

Compose and Decompose

It says zero point one kilogram. 0.1 kg

This is a **decimal number**.

We read this decimal as 1 **tenth**, just like the fraction 1/10.

The dot in a decimal number is called a **decimal point**.

Compose and Decompose

1 tenth = 1/10 = 0.1

1 tenth is written in unit form, as a **decimal fraction**, and as a decimal number. They are all equal.

Write 1 tenth in decimal form on your number line, just like I did.

Compose and Decompose

Let’s see how the number in decimal form changes as we add more bags or tenths of a kilogram.

We can express the weight of 1 bag in two ways: zero point one kilogram, or 1 tenth kilogram.

Tell me the weight of 2 bags using both ways. Start with the decimal point way.

Compose and Decompose

As we add each bag, count and see how the scale shows the weight in decimal form, and record it on your number line.

Notice the scale uses decimal form for 10 tenths. 10 tenths is equal to how many ones and how many tenths?

So, we record that as 1 point 0. Revise your number line.

Compose and Decompose

How many tenths are on the scale now?

Record the weight of 8 bags in fraction form and decimal form. Use an equal sign.

I have 2 bags in my hand. Write the weight of this amount of rice in fraction form and decimal form. Use an equal sign.

Compose and Decompose

When I put together 2/10 kilogram and 8/10 kilogram, I have…?

What other pairs of tenths would make 1 kilogram when put together?

Decompose 1 Meter

Give each pair of students a meter stick and two strips of paper that are each 1 meter long. Ask them to use their meter sticks to divide each paper strip into 10 equal parts. Have them then shade with markers or crayons to show different numbers of tenths. As they work, collect strips to make an ordered set on the board, starting with 1 meter to show 10 tenths, 9 tenths, etc. Generate and record the partner each strip needs to make 1 meter next to each strip (e.g., 0.9 meter + 0.1 meter = 1 meter). Have students then generate two or three equivalent number sentences showing the equality of fraction form and decimal form (e.g., 1/10 meter = 0.1 meter).

Decompose 1 Centimeter

Now that we have practiced decomposing a meter into tenths, let's use that same thinking to decompose a centimeter into tenths.

Take our your centimeter ruler, and draw a 1-centimeter line on the blank paper.

Each centimeter has been partitioned into equal parts.

How many equal parts are there from 0 to 1 centimeter?

Decompose 1 Centimeter

What fraction of a centimeter is one part?

How many units of 1 tenth equal 1 centimeter?

Label your line. 1 cm = 10/10 cm.

Below your line, make a line that measures 9/10 centimeter. Label your line in fraction form and decimal form.

Decompose 1 Centimeter

How many more tenths of a centimeter do we need to have 1 centimeter?

9/10 cm + 1/10 cm = 1 cm

0.9 cm + 0.1 cm = 1 cm

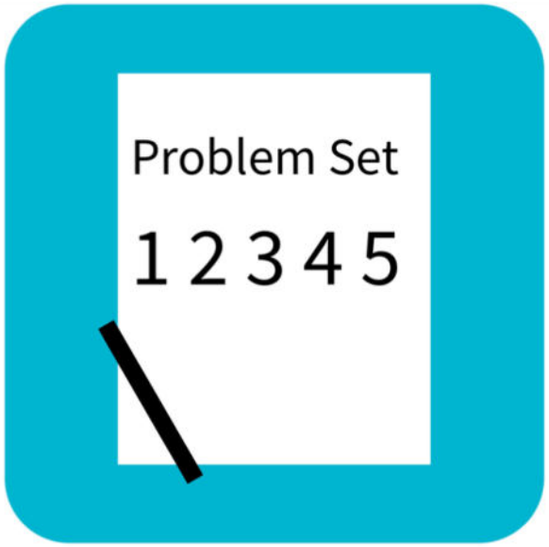
Decompose 1 Centimeter

Now draw a line below these lines that measures 8/10 centimeter.

Label this new line in fraction and decimal form.

Write an addition sentence in both fraction and decimal form to show how many more tenths of a centimeter you need to get to 1 centimeter.

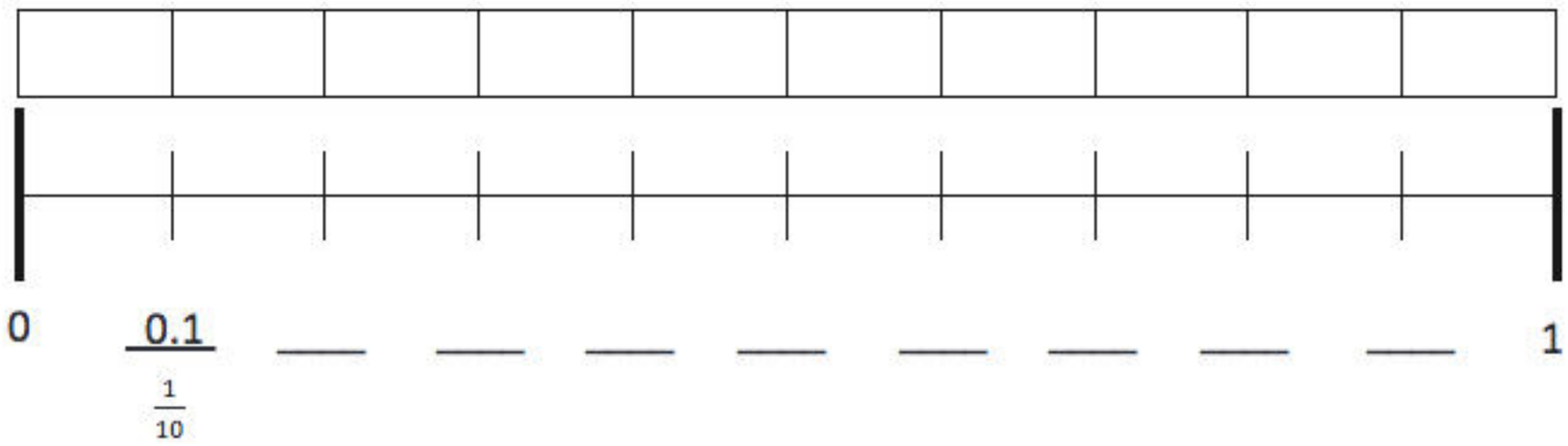
Continue writing more pairs as you work, making a line that is 1/10 centimeter shorter each time.



Problem Set

Name _____ Date _____

1. Shade the first 7 units of the tape diagram. Count by tenths to label the number line using a fraction and a decimal for each point. Circle the decimal that represents the shaded part.



2. Write the total amount of water in fraction form and decimal form. Shade the last bottle to show the correct amount.

Debrief

Participate in the discussion by...

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

Debrief

In Problem 2, we measured liters of water. What other type of material might we be measuring when we measure 6 tenths of a liter? Where have you seen or used liters in your everyday life?

New math vocabulary:

tenth, decimal fraction, decimal numbers, decimal point

Exit Ticket

Name _____ Date _____

1. Fill in the blank to make the sentence true in both fraction form and decimal form.

a.	$\frac{9}{10}$ cm + _____ cm = 1 cm	0.9 cm + _____ cm = 1.0 cm
b.	$\frac{4}{10}$ cm + _____ cm = 1 cm	0.4 cm + _____ cm = 1.0 cm

2. Match each amount expressed in unit form to its fraction form and decimal form.

3 tenths	$\frac{5}{10}$	0.8
8 tenths	$\frac{8}{10}$	0.3
5 tenths	$\frac{3}{10}$	0.5