Eureka Math

3rd Grade
Module 7
Lesson 2

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.
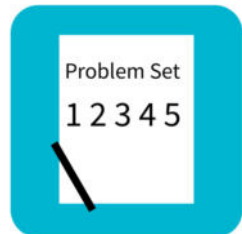
Icons

RDW — 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 2

Objective: Solve word problems in varied contexts using a letter to represent the unknown.

Suggested Lesson Structure

■ Fluency Practice	(15 minutes)	
■ Concept Development	(35 minutes)	
■ Student Debrief	(10 minutes)	
Total Time	**(60 minutes)**	
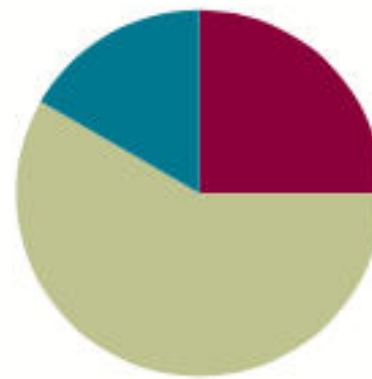
Problems 2 and 5 on the Problem Set extend beyond Grade 3 Standards. Customize accordingly.

I can solve word problems in a variety of contexts.

I can use variables to represent the unknown in equations.

Fluency Practice

Name the Shape (3 min.)

What's the name of the shape?

Triangle.

Fluency Practice

What's one name for this shape?

Rectangle (or parallelogram or quadrilateral).

How many sides does a rectangle have?

How many right angles does a rectangle have?

What's the name for all four-sided figures?

Quadrilateral.

Fluency Practice

How many sides does this shape have?

What's the name for all five-sided figures?

Pentagon

Fluency Practice

How many sides does this shape have?

What's the name for all six-sided figures?

Hexagon
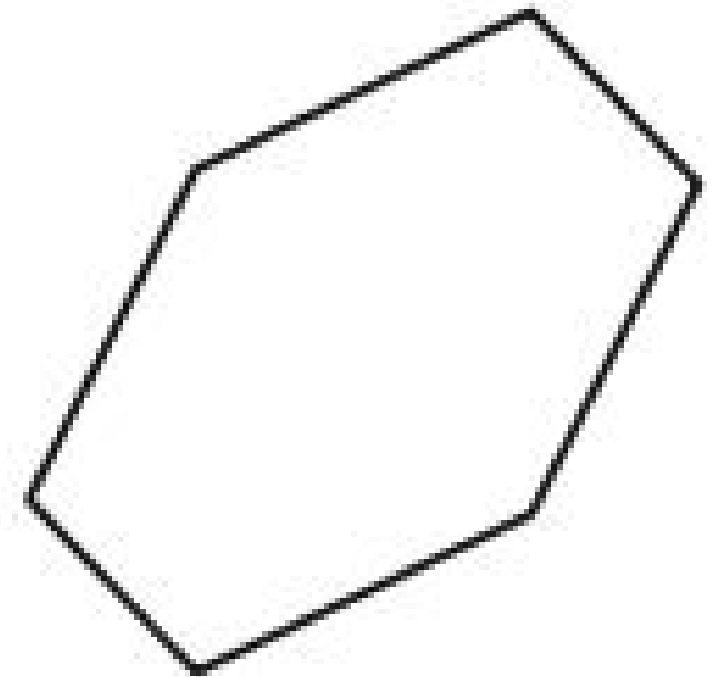
Fluency Practice

$7 \times 3 = x$

Let's skip-count up by threes. I'll raise a finger for each three.

3, 6, 9, 12, 15, 18, 21.

Let's skip-count by threes starting at 15. Why is 15 a good place to start?

15 (5 fingers), 18 (6 fingers), 21 (7 fingers).

Fluency Practice

$7 \times 3 = x$

Let's see how we can skip-count down to find the answer, too. Start at 30 with 10 fingers, 1 for each three.

30 (10 fingers), 27 (9 fingers), 24 (8 fingers), 21 (7 fingers).

$7 \times 3 = 21$

Fluency Practice

Multiply by 3 (8 min.)

$9 \times 3 = ?$

Let's skip-count up by threes to find the answer.

3, 6, 9, 12, 15, 18, 21, 24, 27.

$9 \times 3 = 27$

Fluency Practice

$6 \times 3 = n$

Let's skip-count up by threes to find the answer.

3, 6, 9, 12, 15, 18.

$6 \times 3 = 18$

Fluency Practice

Multiply by 3 (8 min.)

8 × 3 = ?

Let's skip-count up by threes to find the answer.

3, 6, 9, 12, 15, 18, 21, 24.

8 × 3 = 24

Fluency Practice

Multiply by 3 (8 minutes)

Let's practice multiplying by 3. Be sure to work left to right across the page.

Multiply.

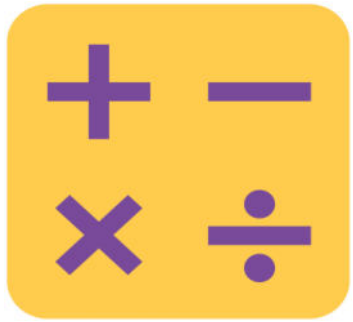|			
3 x 1 = ____	3 x 2 = ____	3 x 3 = ____	3 x 4 = ____
3 x 5 = ____	3 x 6 = ____	3 x 7 = ____	3 x 8 = ____
3 x 9 = ____	3 x 10 = ____	3 x 5 = ____	3 x 6 = ____
3 x 5 = ____	3 x 7 = ____	3 x 5 = ____	3 x 8 = ____
3 x 5 = ____	3 x 9 = ____	3 x 5 = ____	3 x 10 = ____
3 x 6 = ____	3 x 5 = ____	3 x 6 = ____	3 x 7 = ____
3 x 6 = ____	3 x 8 = ____	3 x 6 = ____	3 x 9 = ____
3 x 6 = ____	3 x 7 = ____	3 x 6 = ____	3 x 7 = ____
3 x 8 = ____	3 x 7 = ____	3 x 9 = ____	3 x 7 = ____
3 x 8 = ____	3 x 6 = ____	3 x 8 = ____	3 x 7 = ____
3 x 8 = ____	3 x 9 = ____	3 x 9 = ____	3 x 6 = ____
3 x 9 = ____	3 x 7 = ____	3 x 9 = ____	3 x 8 = ____
3 x 9 = ____	3 x 8 = ____	3 x 6 = ____	3 x 9 = ____
3 x 7 = ____	3 x 9 = ____	3 x 6 = ____	3 x 8 = ____
3 x 9 = ____	3 x 7 = ____	3 x 6 = ____	3 x 8 = ____

multiply by 3 (6–10)

Fluency Practice

Equivalent Counting with Units of 4 (4 minutes)

Count to 10 as I write. Please do not count faster than I can write.

(Write as students count.)

1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Count to 10 fours. (Write as students count.)

1 four, 2 fours, 3 fours, 4 fours, 5 fours, 6 fours, 7 fours, 8 fours, 9 fours, 10 fours.

Fluency Practice

Equivalent Counting with Units of 3 (4 minutes)

1	2	3	4	5	6	7	8	9	10
1 four	2 fours	3 fours	4 fours	5 fours	6 fours	7 fours	8 fours	9 fours	10 fours
4	8	12	16	20	24	28	32	36	40
1 four	8	3 fours	16	5 fours	24	7 fours	32	9 fours	40
4	2 fours	12	4 fours	20	6 fours	28	8 fours	36	10 fours

🖊 Concept Development

Part 1: Work cooperatively to identify multiple solution paths.

Today, we're going to work in groups to solve Problem 6.

Let's prepare our chart paper by folding it into three equal parts.

With your group, read Problem 6 now.

The total amount of rain that fell in New York City in two years was 282 centimeters. In the first year, 185 centimeters of rain fell. How many more centimeters of rain fell in the first year than in the second year?

Concept Development

Take a quiet moment to visualize the problem.

Describe the problem to your group.

Think about our Read-Draw-Write process. At the signal, say the question we should be asking ourselves.

What can I draw?

Concept Development

Work with your group to draw at least two different ways to represent the problem.

Make the drawings on the top third of your paper.

Each of you has a different color marker so that your participation shows on your poster.

Make sure each member of your group contributes.

Concept Development

As you drew, what did you notice about the problem that will help you solve?

You have more than one drawing on your paper. As a group, discuss which one represents the problem most clearly. Circle it, and be ready to talk about your choice.

Concept Development

Select two or three groups to share their thinking with the rest of the class. Choose groups strategically to spark discussion and push learning in terms of both modeling and oral explanation. Selections could include a group with an exemplary choice, a group with an unusual choice, or a group with an excellent explanation.

Concept Development

Is your thinking about your work or the problem different after listening to your friends? Take a moment to check in with your group. Adjust your drawing or thinking based on what you saw and heard.

Concept Development

Here are some drawings. How are these similar to the drawings we have seen? How are they different?

Step 1:
185 cm   r
Year 1   Year 2
282 cm

Step 2:
Year 1   185 cm
Year 2   r   ?

Step 1:
282 cm
185cm   n cm

Step 2:
185cm
n cm   ?

Year 1   185cm
Year 2   n cm   ?   282cm
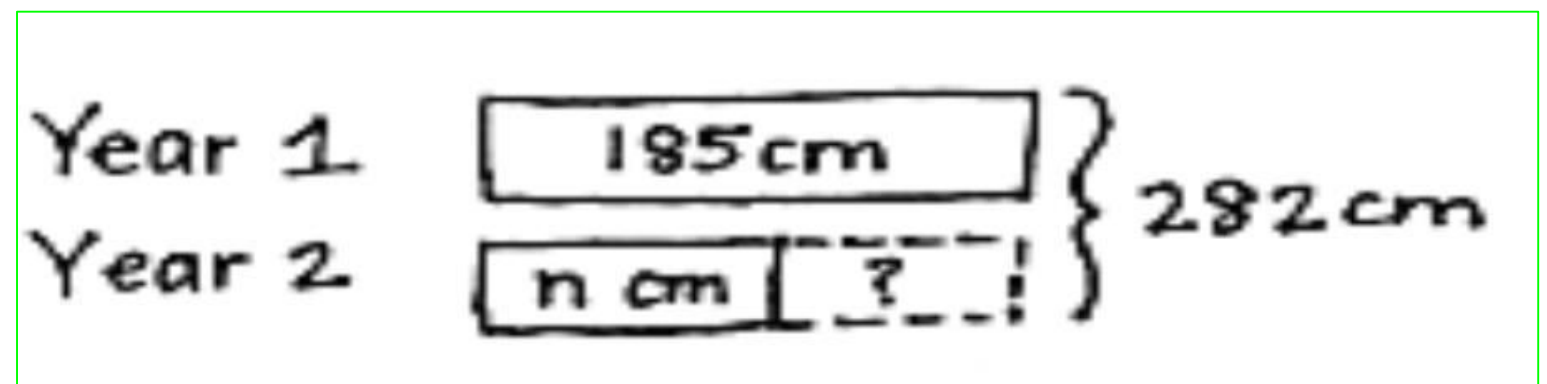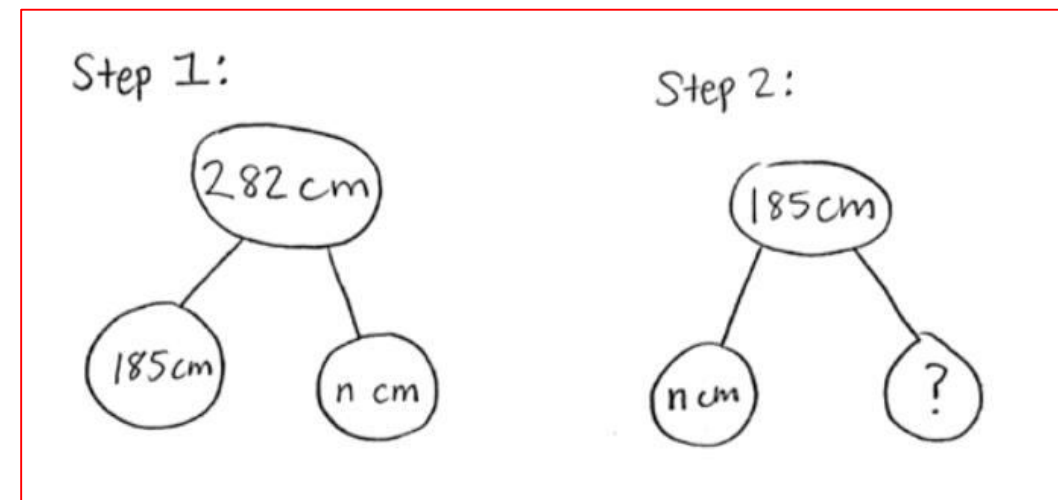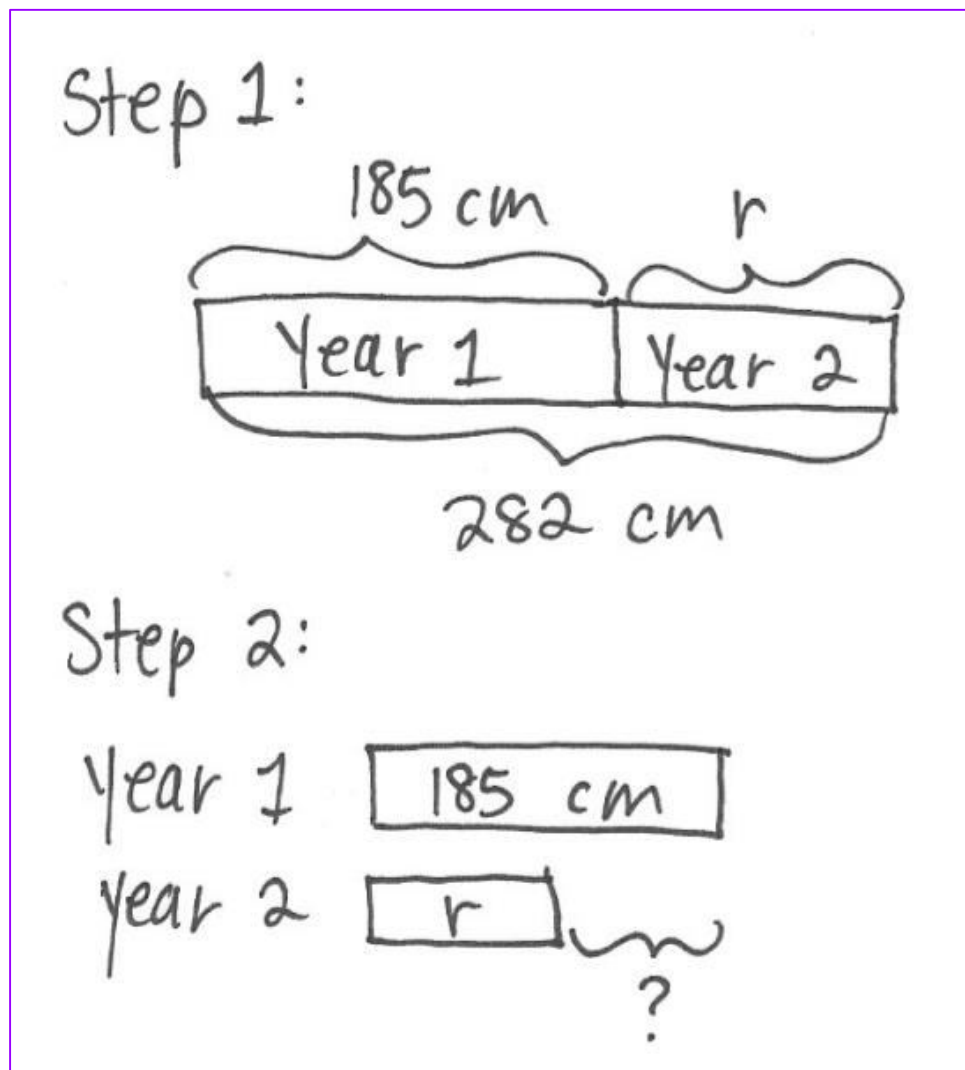
Concept Development

Think about the Read-Draw-Write process. What is our next step?

To write equations and solve!

Work with your group to write equations and solve the problem. Use your drawing. Record your work in the middle third of your chart paper, and be ready to talk about your steps.

Concept Development

Select a few groups to share their thinking with the rest of the class. Again, choose groups strategically. Allow students time to listen to the groups, share, and ask questions.

☑️ Concept Development

Take a moment to compare your work with what you saw and heard, and maybe make adjustments.

Work with your group to finish the problem. What is our final step?

To write a sentence that answers the question.

Record your sentence on the bottom third of your paper.

Possible responses: 88 more centimeters of rain fell in the first year than in the second. There were 88 more centimeters of rain in Year 1.

Concept Development

Select a few groups to share their work with the rest of the class. Notice which students may not have reread the question before writing. If necessary, guide students to adjust their sentences so that their answers more closely align with the question asked.

☑ Concept Development

Assign each student two problems from the Problem Set. Challenge them to record more than one way to draw for each problem they solve. Ask students to share their work with the members of their groups from Part 1. When sharing, students should include answers to the following questions:

- How does your drawing represent the problem clearly?
- How did your drawing help you decide on a way to
- solve?
- Why does the equation that you used to model make sense with your drawing and with the problem?
- How do you know you answered the question?

⬜ Concept Development

Have students share their work in groups of three or four. Encourage group members to practice asking questions of the presenter. They might ask some of the questions listed below.

- I'm not sure what you mean. Can you say more about that?
- Why did you decide _____ ?
- What do you think about _____ instead?
- Which other way did you try to draw the problem?
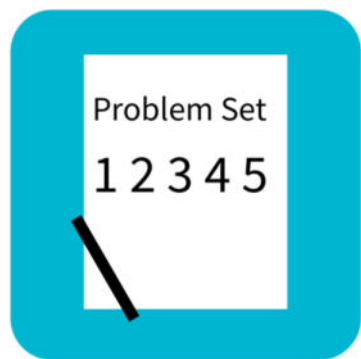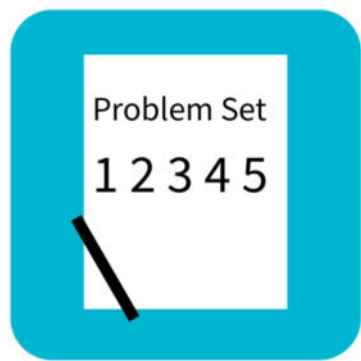
Problem Set

Name _____   Date _____

Use the RDW process to solve. Use a letter to represent the unknown in each problem.

1. Leanne needs 120 tiles for an art project. She has 56 tiles. If tiles are sold in boxes of 8, how many more boxes of tiles does Leanne need to buy?

2. Gwen pours 236 milliliters of water into Ravi's beaker. Henry pours 189 milliliters of water into Ravi's beaker. Ravi's beaker now contains 800 milliliters of water. How much water was in Ravi's beaker to begin with?

3. Maude hung 3 pictures on her wall. Each picture measures 8 inches by 10 inches. What is the total area of the wall covered by the pictures?

EUREKA MATH

Lesson 2:   Solve word problems in varied contexts using a letter to represent the unknown.

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4. Kami scored a total of 21 points during her basketball game. She made 6 two-point shots, and the rest were three-point shots. How many three-point shots did Kami make?

5. An orange weighs 198 grams. A kiwi weighs 85 grams less than the orange. What is the total weight of the fruit?

6. The total amount of rain that fell in New York City in two years was 282 centimeters. In the first year, 185 centimeters of rain fell. How many more centimeters of rain fell in the first year than in the second year?
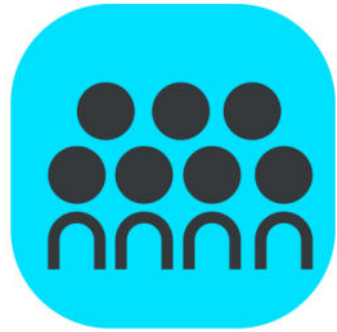
Debrief

How are your models related to your equations in Problem 1?

Invite students to share different equations that can be used to solve Problem 3.
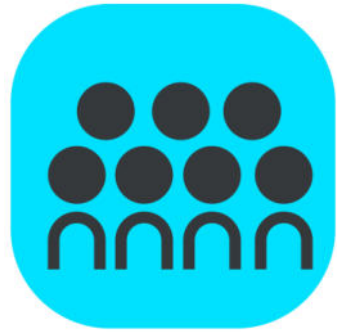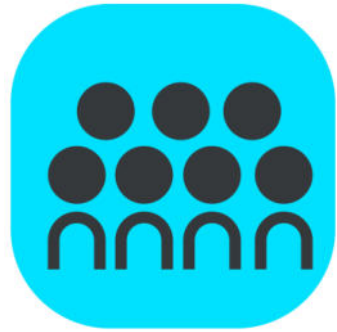
Debrief

What operations are used to solve Problem 4? In what order? How did you figure that out?

Invite students to articulate their thought processes for preparing to present their work.

How did it feel to present your work to friends?

Debrief

What did you learn about yourself or your work by presenting?

What was it like to be an audience member to a friend who was presenting?

Did you find it easy or difficult to ask your friends questions about their work? Why?

Exit Ticket (3 minutes)

Lesson 2 Exit Ticket 3•7

Name _____ Date _____

Use the RDW process to solve the problem below. Use a letter to represent the unknown.

Jaden's bottle contains 750 milliliters of water. He drinks 520 milliliters at practice and then another 190 milliliters on his way home. How many milliliters of water are left in Jaden's bottle when he gets home?