Eureka Math

3rd Grade
Module 6
Lesson 8

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.
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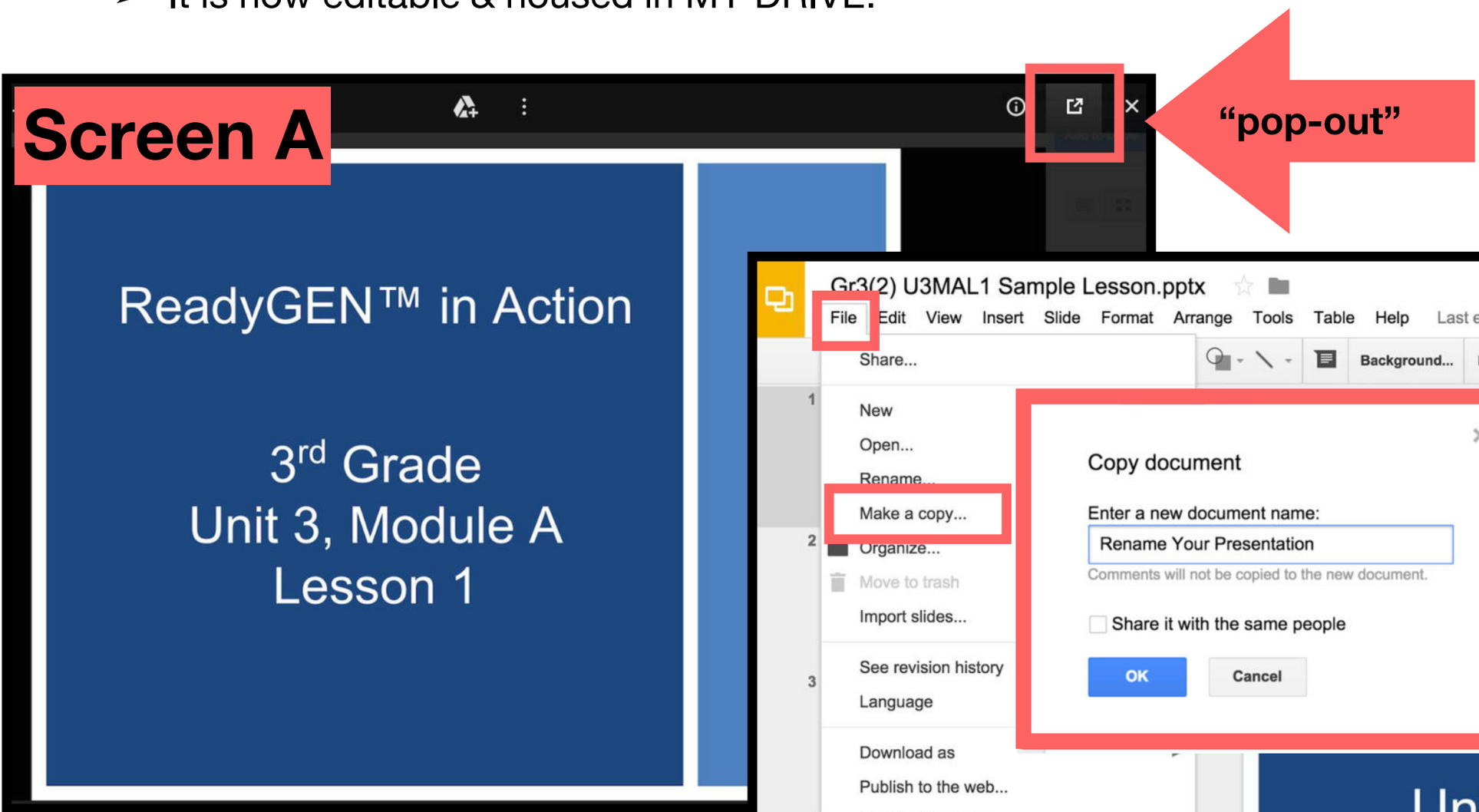
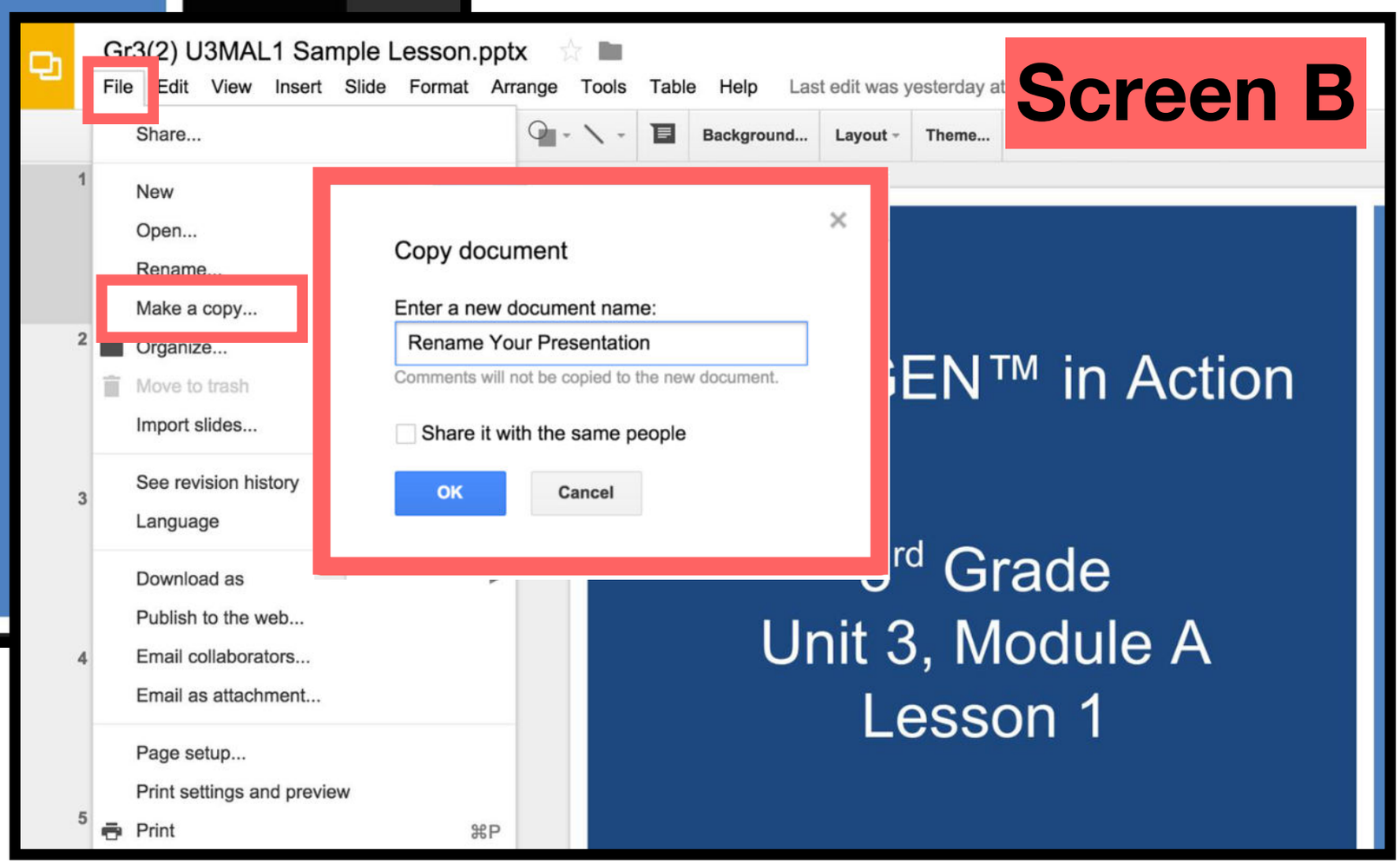
- It is now editable & housed in MY DRIVE.





Icons

Read, Draw, Write

Learning Target

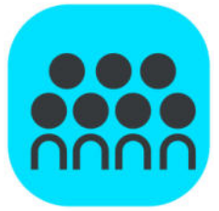
Personal White Board

Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

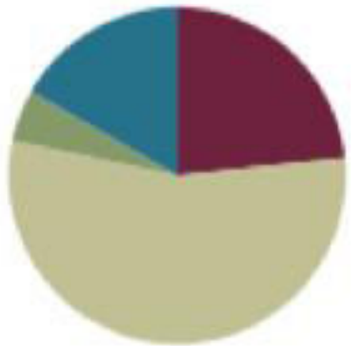
Small Group Time

Lesson 8

Objective: Represent measurement data with line plots.

Suggested Lesson Structure

Fluency Practice	(14 minutes)
Application Problem	(3 minutes)
Concept Development	(33 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can represent measurement data with line plots.

Fluency Practice

Group Counting (3 min.)

Count by eights to 80.

8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

4 × 8 = ?

What is the value of 4 eights? Count by eights if you are unsure.

Say the multiplication sentence.

4 × 8 = 32

Fluency Practice

Group Counting (3 min.)

8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

7 × 8 = ?

What is the value of 7 eights? Count by eights if you are unsure.

Say the multiplication sentence.

7 × 8 = 56

Fluency Practice

Group Counting (3 min.)

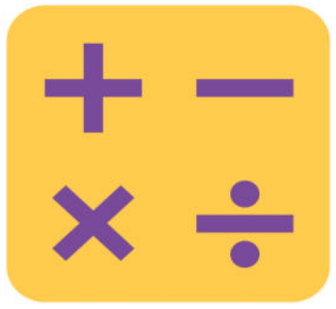
8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

9 × 8 = ?

What is the value of 9 eights? Count by eights if you are unsure.

Say the multiplication sentence.

9 × 8 = 72



Fluency Practice

Group Counting (3 min.)

8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

24 ÷ 8 = ?

Count by eights if you are unsure.

Say the division sentence.

24 ÷ 8 = 3

Fluency Practice

Group Counting (3 min.)

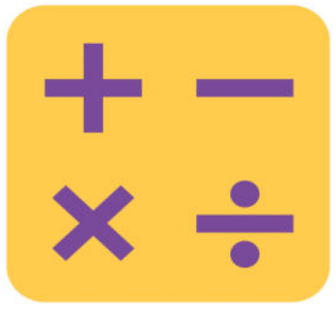
8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

40 ÷ 8 = ?

Count by eights if you are unsure.

Say the division sentence.

40 ÷ 8 = 5



Fluency Practice

Group Counting (3 min.)

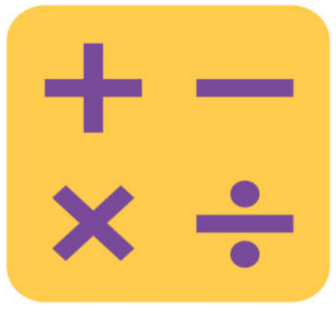
8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

48 ÷ 8 = ?

Count by eights if you are unsure.

Say the division sentence.

48 ÷ 8 = 6



Fluency Practice

Group Counting (3 min.)

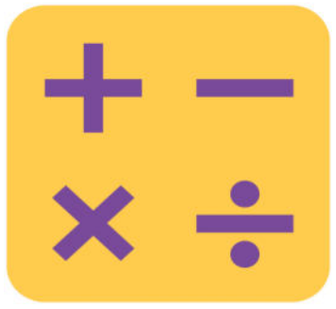
8, 16, 24, 32, 40, 48, 56, 64, 72, 80.

64 ÷ 8 = ?

Count by eights if you are unsure.

Say the division sentence.

64 ÷ 8 = 6



Fluency Practice

Group Counting (3 min.)

Count by 9s to 90.

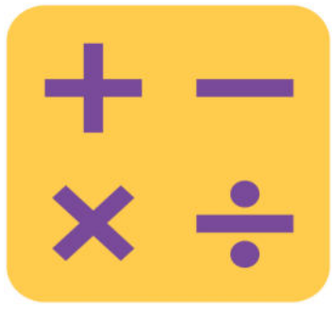
9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

2 × 9 = ?

What is the value of 2 nines? Count by nines if you are unsure.

Say the multiplication sentence.

2 × 9 = 18



Fluency Practice

Group Counting (3 min.)

Count by 9s to 90.

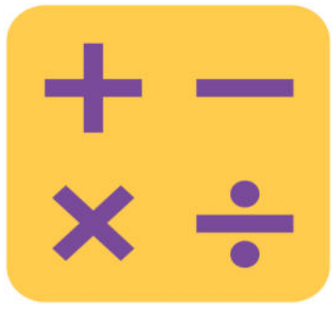
9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

$4 \times 9 = ?$

What is the value of 4 nines? Count by nines if you are unsure.

Say the multiplication sentence.

$4 \times 9 = 36$



Fluency Practice

Group Counting (3 min.)

Count by 9s to 90.

9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

6 × 9 = ?

What is the value of 6 nines? Count by nines if you are unsure.

Say the multiplication sentence.

6 × 9 = 54

Fluency Practice

Group Counting (3 min.)

Count by 9s to 90.

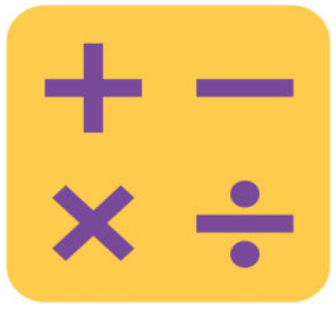
9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

8 × 9 = ?

What is the value of 8 nines? Count by nines if you are unsure.

Say the multiplication sentence.

8 × 9 = 54



Fluency Practice

Group Counting (3 min.)

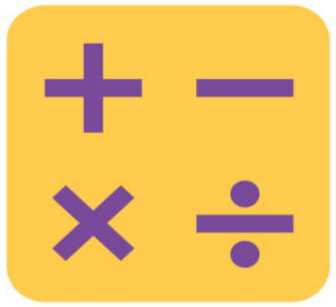
9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

27 ÷ 9 = ?

Count by nines if you are unsure.

Say the division sentence.

27 ÷ 9 = 3



Fluency Practice

Group Counting (3 min.)

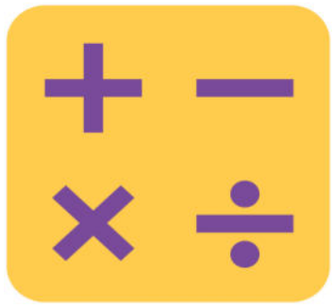
9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

45 ÷ 9 = ?

Count by nines if you are unsure.

Say the division sentence.

45 ÷ 9 = 5



Fluency Practice

Group Counting (3 min.)

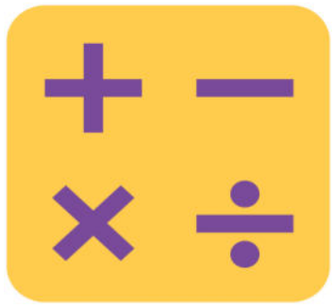
9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

63 ÷ 9 = ?

Count by nines if you are unsure.

Say the division sentence.

63 ÷ 9 = 7



Fluency Practice

Group Counting (3 min.)

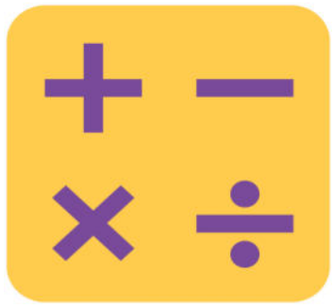
9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

81 ÷ 9 = ?

Count by nines if you are unsure.

Say the division sentence.

81 ÷ 9 = 9



Fluency Practice

Multiply by 6 (7 minutes)

5 × 7 = ____

Let’s skip-count up by sevens to find the answer.

7, 14, 21, 28, 35.

5 x 7 = 35

Fluency Practice

Multiply by 6 (7 minutes)

3 × 7 = ____

Let’s skip-count up by sevens to find the answer.

7, 14, 21.

3 x 7 = 21

Fluency Practice

Multiply by 6 (7 minutes)

7, 14, 21, 28, 35.

3 x 7 = 21

Let’s see how we can skip-count down to find the answer, too.

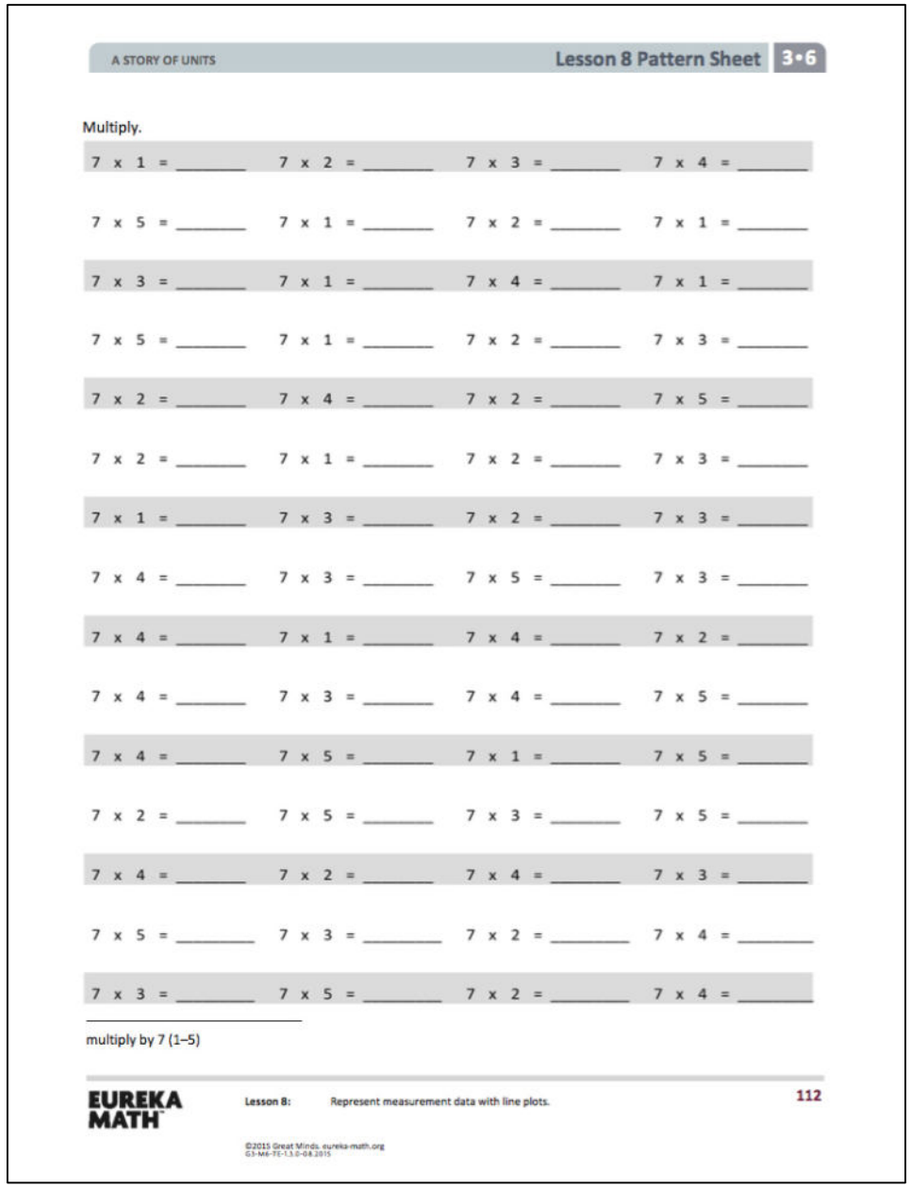
Start at 35 with 5 fingers, 1 for each seven.

S: 35 (5 fingers), 28 (4 fingers), 21 (3 fingers).

Fluency Practice

Multiply by 6 (7 minutes)

Let’s practice multiplying by 7. Be sure to work left to right across the page.



A STORY OF UNITS — Lesson 8 Pattern Sheet — 3•6

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

multiply by 7 (1–5)

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Fluency Practice

Count by Halves and Fourths (4 minutes)

Count by halves to 12 halves as I write. Please do not count faster than I can write.

(Write in fractional form as students count.)

Say 2 halves as a whole number.

Count by halves. Say whole numbers when you arrive at whole numbers. Try not to look at the board.

Fluency Practice

Count by Halves and Fourths (4 minutes)

Count by fourths to 12 fourths as I write. Please do not count faster than I can write.

(Write in fractional form as students count.)

Say 4 fourths as a whole number.

Count by fourths. Say whole numbers when you arrive at whole numbers. Try not to look at the board.

Application Problem

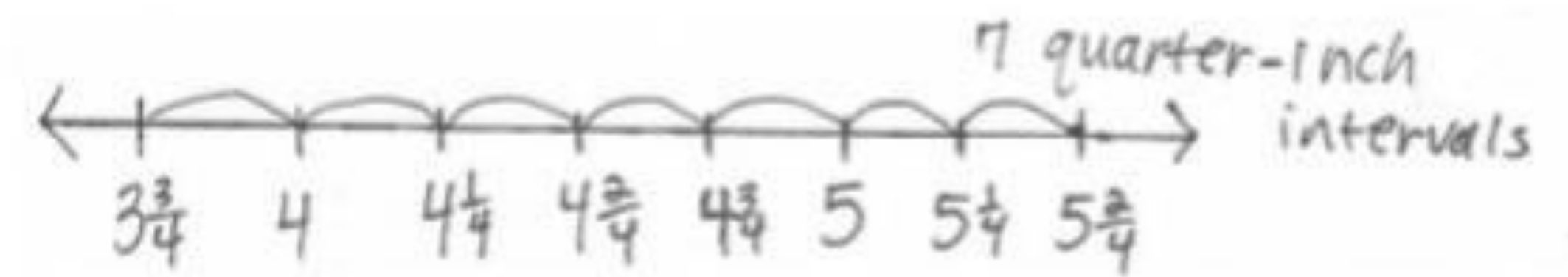
Mrs. Byrne's class is studying worms. They measure the lengths of the worms to the nearest quarter inch.

The length of the shortest worm is 3 ¾ inches. The length of the longest worm is 5 2/4 inches.

Kathleen says they need 8 quarter-inch intervals to plot the lengths of the worms on a line plot.

Is she right? Why or why not?

Application Problem



No, Kathleen is not right because they will need 7 quarter-inch intervals, not 8.

Concept Development

Mrs. Schaut measures the heights of the sunflower plants in her garden. The measurements are shown in the chart below.

Heights of Sunflower Plants (in Inches)				
61	63	62	61	$62\frac{1}{2}$
$61\frac{1}{2}$	$61\frac{1}{2}$	$61\frac{1}{2}$	62	60
64	62	$60\frac{1}{2}$	$63\frac{1}{2}$	61
63	$62\frac{1}{2}$	$62\frac{1}{2}$	64	$62\frac{1}{2}$
$62\frac{1}{2}$	$63\frac{1}{2}$	63	$62\frac{1}{2}$	$63\frac{1}{2}$
62	$62\frac{1}{2}$	62	63	$60\frac{1}{2}$

What data is shown on this chart?

How does the **measurement data** in this chart compare to the measurement data we plotted yesterday?

Concept Development

Mrs. Schaut measures the heights of the sunflower plants in her garden. The measurements are shown in the chart below.

Heights of Sunflower Plants (in Inches)				
61	63	62	61	$62\frac{1}{2}$
$61\frac{1}{2}$	$61\frac{1}{2}$	$61\frac{1}{2}$	62	60
64	62	$60\frac{1}{2}$	$63\frac{1}{2}$	61
63	$62\frac{1}{2}$	$62\frac{1}{2}$	64	$62\frac{1}{2}$
$62\frac{1}{2}$	$63\frac{1}{2}$	63	$62\frac{1}{2}$	$63\frac{1}{2}$
62	$62\frac{1}{2}$	62	63	$60\frac{1}{2}$

Let's make a line plot to display this data.

With a partner, discuss the steps you should take to create a line plot of the data.

Concept Development

What number does the first tick mark on your line plot represent? How do you know?

And the last tick mark? How do you know?

What interval should you use to draw the tick marks between 60 and 64? How do you know?

Go ahead and create your line plot.

Concept Development

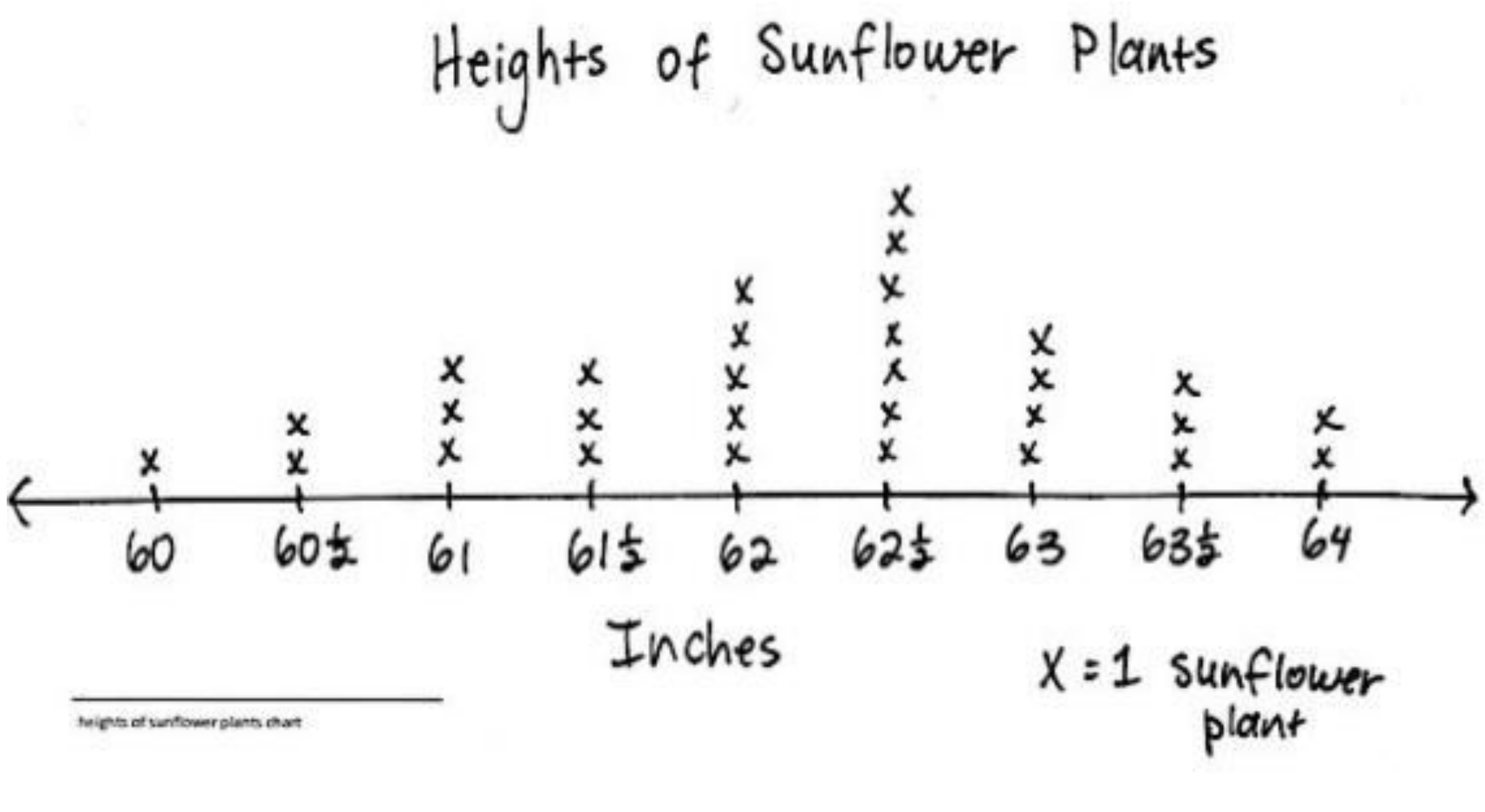
What number does the first tick mark on your line plot represent? How do you know?

And the last tick mark? How do you know?

What interval should you use to draw the tick marks between 60 and 64? How do you know?

Go ahead and create your line plot.

Concept Development



heights of sunflower plants chart

Concept Development

Tell me a true statement about the heights of the sunflower plants in Mrs. Schaut's garden.

Are these statements true of the data in the chart?

How does having the data displayed as a line plot help you to think and talk about the data?

What are the three most frequent measurements in order from shortest to tallest?

What is the total number of plants that measure 62, 62 ½, and 63 inches?

Concept Development

How many plants were measured in all?

Write a number sentence to show how many plants do not measure 62, 62 ½, or 63 inches.

Most of the sunflower plants measure between 62 and 63 inches. True or False? Why?

Concept Development

What do you notice about the location of the three most frequent measurements on the line plot?

What do you notice about the data before the three most frequent measurements?

How about the data after the three most frequent measurements?

Concept Development

Heights of Sunflower Plants (in Inches)				
61	63	62	61	$62\frac{1}{2}$
$61\frac{1}{2}$	$61\frac{1}{2}$	$61\frac{1}{2}$	62	60
64	62	$60\frac{1}{2}$	$63\frac{1}{2}$	61

Erase the Xs on your line plot and create a new line plot with this data.

Did the three most frequent measurements change when you plotted less data?

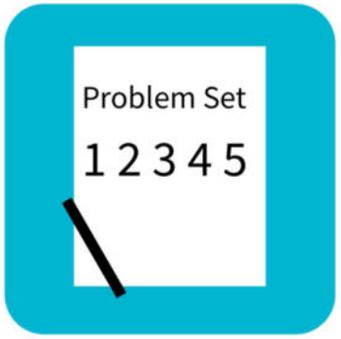
Concept Development

Heights of Sunflower Plants (in Inches)				
61	63	62	61	$62\frac{1}{2}$
$61\frac{1}{2}$	$61\frac{1}{2}$	$61\frac{1}{2}$	62	60
64	62	$60\frac{1}{2}$	$63\frac{1}{2}$	61

Does that mean that most of the sunflowers in Mrs. Schaut's garden are between 61 and 62 inches tall?

How did using less data change how we can talk about the heights of most of the sunflowers? Discuss with your partner.

How did the shape of the line plot change when we used less data? Talk to a partner.



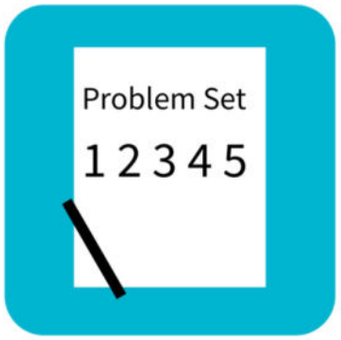
Problem Set

Name _____ Date _____

Delilah stops under a silver maple tree and collects leaves. At home, she measures the widths of the leaves to the nearest $\frac{1}{4}$ inch and records the measurements as shown below.

Widths of Silver Maple Tree Leaves (in Inches)				
$5\frac{3}{4}$	6	$6\frac{1}{4}$	6	$5\frac{3}{4}$
$6\frac{1}{2}$	$6\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{3}{4}$	6
$6\frac{1}{4}$	6	6	$6\frac{1}{2}$	$6\frac{1}{4}$
$6\frac{1}{2}$	$5\frac{3}{4}$	$6\frac{1}{4}$	6	$6\frac{3}{4}$
6	$6\frac{1}{4}$	6	$5\frac{3}{4}$	$6\frac{1}{2}$

a. Use the data to create a line plot below.



Problem Set

b. Explain the steps you took to create the line plot.

c. How many more leaves were 6 inches wide than $6\frac{1}{2}$ inches wide?

d. Find the three most frequent measurements on the line plot. What does this tell you about the typical width of a silver maple tree leaf?

Debrief

Look at Problem (b). With a partner, compare the steps you took to create the line plot.

Invite students to share thinking for Problem (d). What can you say about most of the leaves from Delilah's tree?

Debrief

If the only measurement data we had was the top two rows of the chart, how might that change your understanding of the width of most of Delilah's leaves?

Why does having a large amount of data help us have a clearer understanding of what the data means?

Debrief

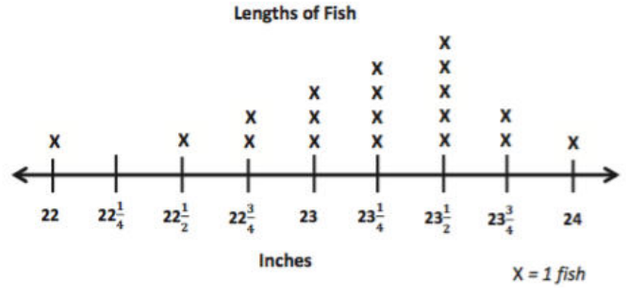
Compare the shape of this data to that of the bean plants from yesterday. Why might the bean plants have grown so irregularly whereas the sunflower plants did not? Might their environments have been different?

Looking at the size of most of the leaves from Delilah’s tree, do you know any trees in your neighborhood that might be the same kind? Do you know any that are certainly not the same kind?

Exit Ticket (3 minutes)

Name _____ Date _____

The line plot below shows the lengths of fish the fishing boat caught.



a. Find the three most frequent measurements on the line plot.

b. Find the difference between the lengths of the longest and shortest fish.

c. How many more fish were $23\frac{1}{4}$ inches long than 24 inches long?