Eureka Math

3rd Grade
Module 6
Lesson 3

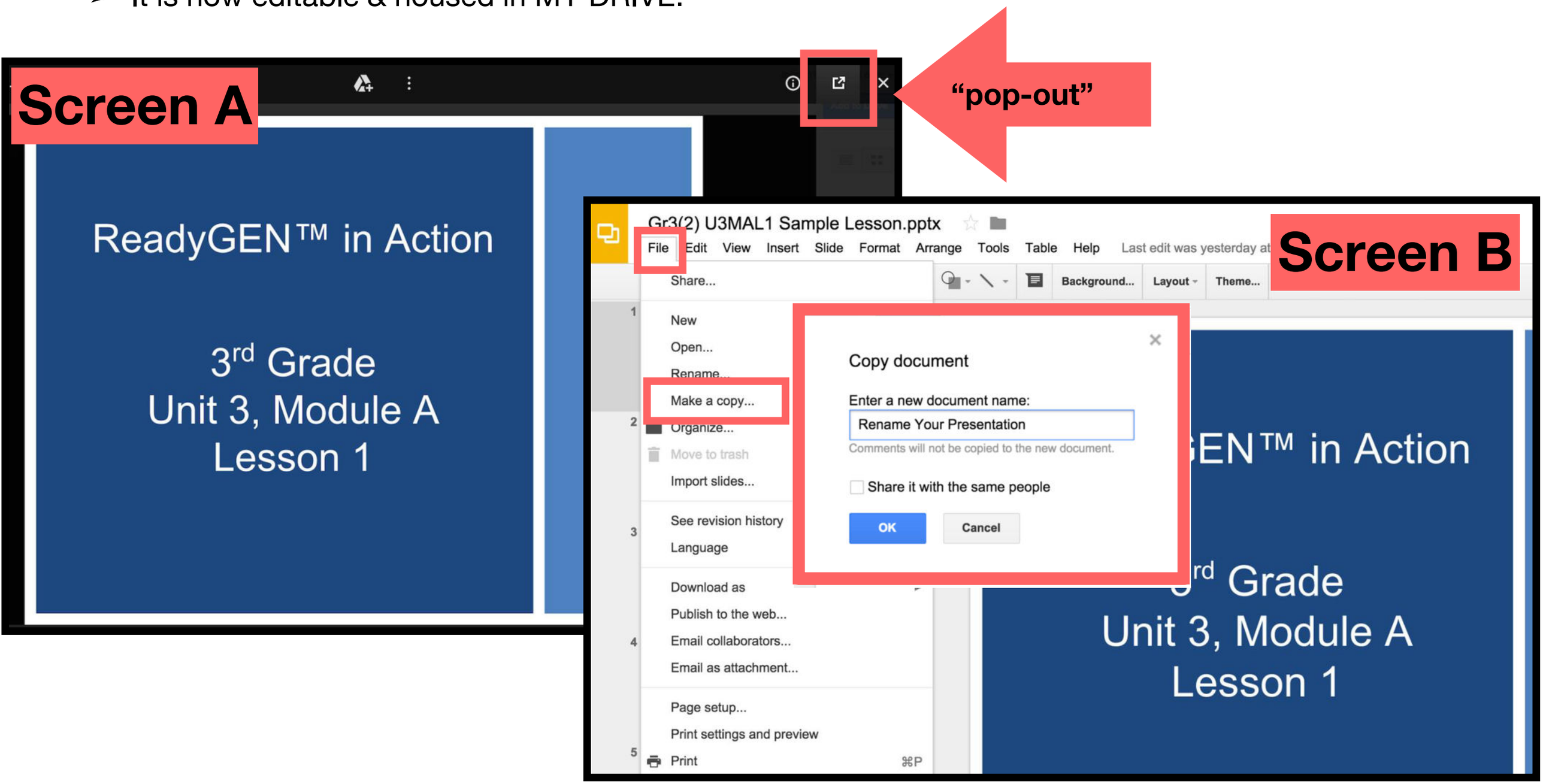
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

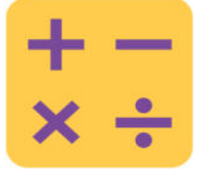
Read, Draw, Write

Learning Target

Personal White Board

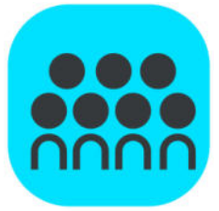
Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

Small Group Time

Lesson 4

Objective: Solve one- and two-step problems involving graphs.

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Application Problem	(8 minutes)
Concept Development	(32 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

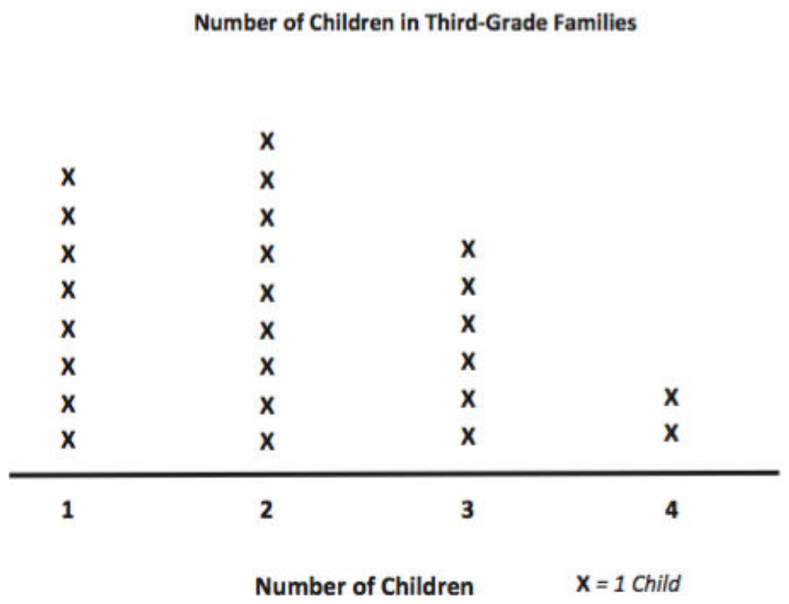
I can solve one- and two-step problems involving bar graphs.

CCSS.Math.Content.3.MD.B.3

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.

Fluency Practice

Read Line Plots (5 min.)

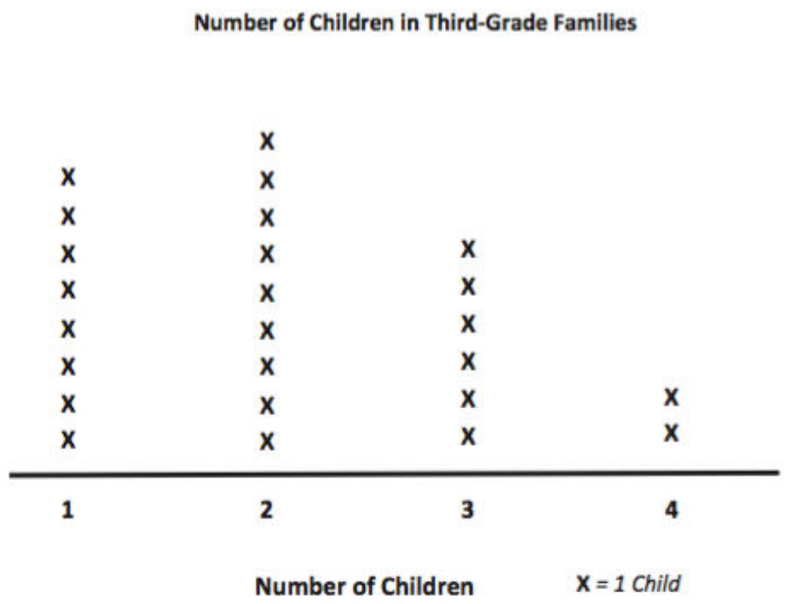


This line plot shows how many children are in the families of students in a third-grade class.

How many students only have **one child** in their family? Let's count to find the answer.

Fluency Practice

Read Line Plots (5 min.)



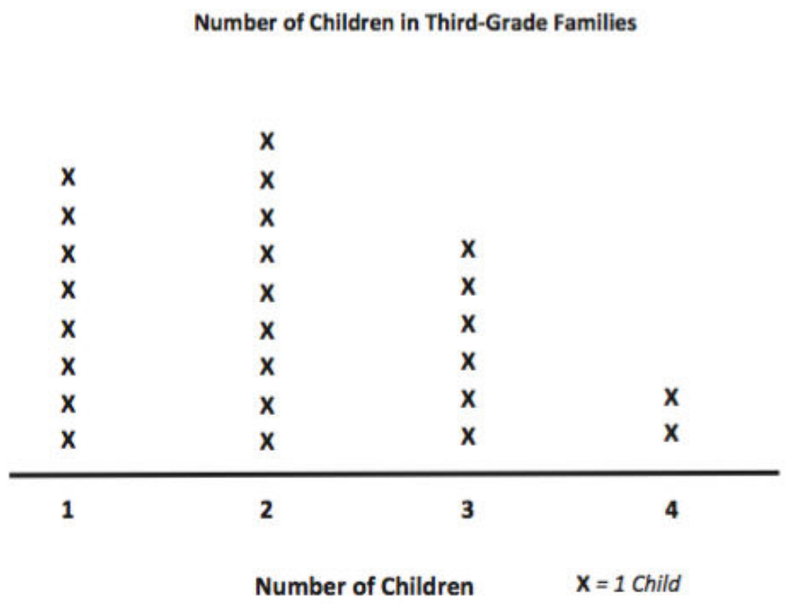
How many students only have **two children** in their family?

How many students only have **three children** in their family?

How many students only have **four children** in their family?

Fluency Practice

Read Line Plots (5 min.)

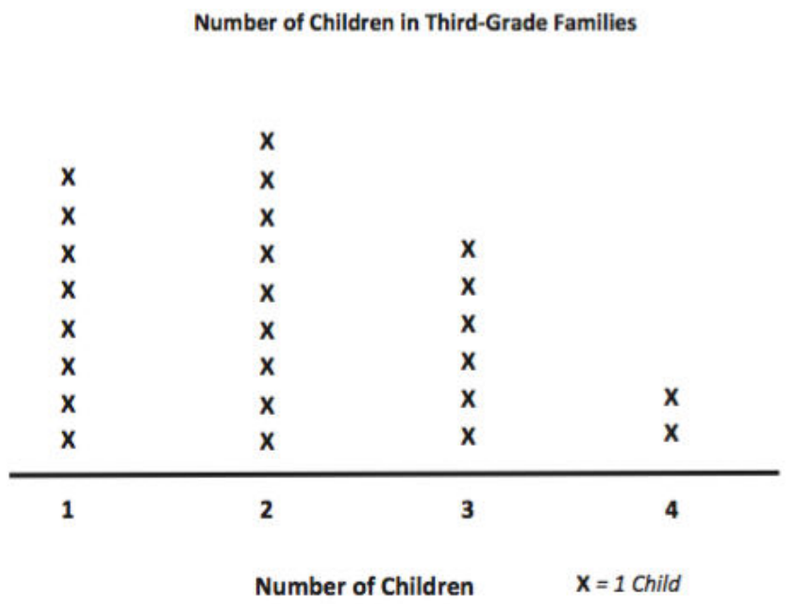


Most students have how many children in their family?

Write a number sentence to show how many more third graders have 2 children in their family than 3 children.

Fluency Practice

Read Line Plots (5 min.)

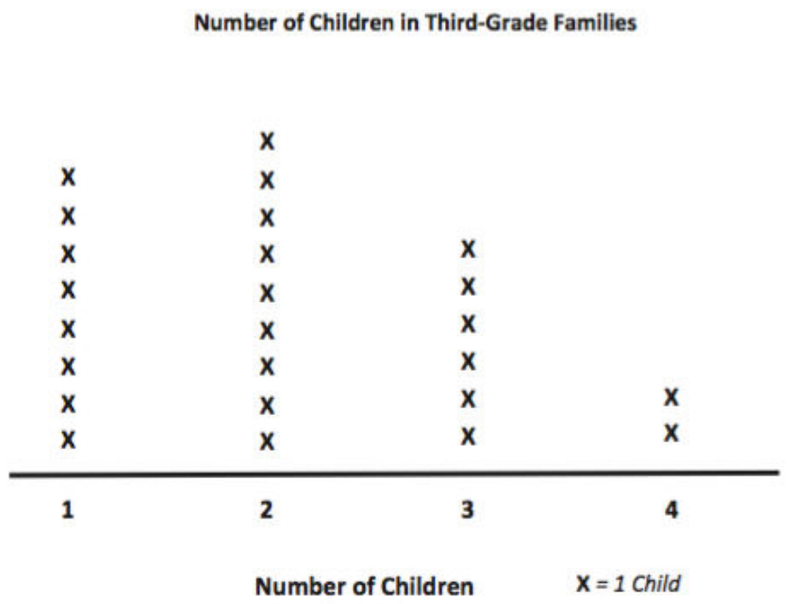


How many fewer third graders have 4 children in their family than 2 children?

How many more third graders have 1 child in their family than 3 children?

Fluency Practice

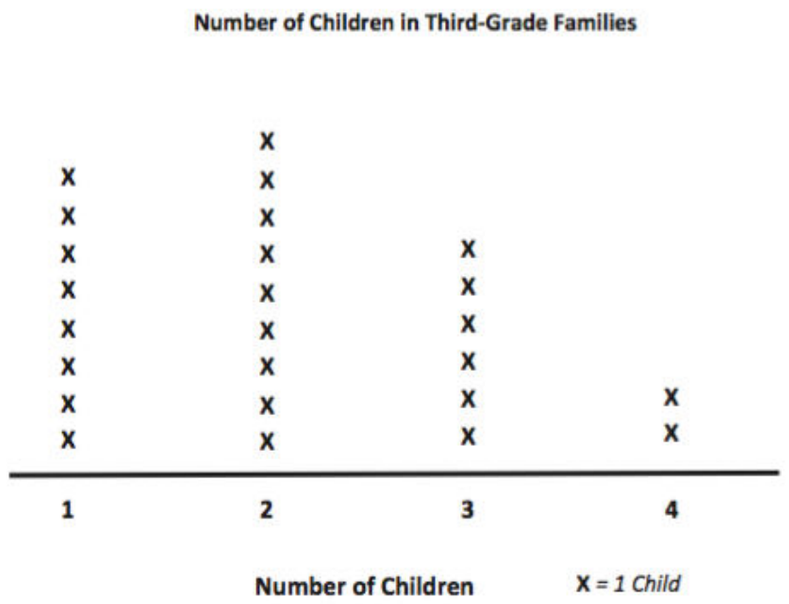
Read Line Plots (5 min.)



Write a number sentence to show how many third graders have 3 or 4 children in their family.

Fluency Practice

Read Line Plots (5 min.)



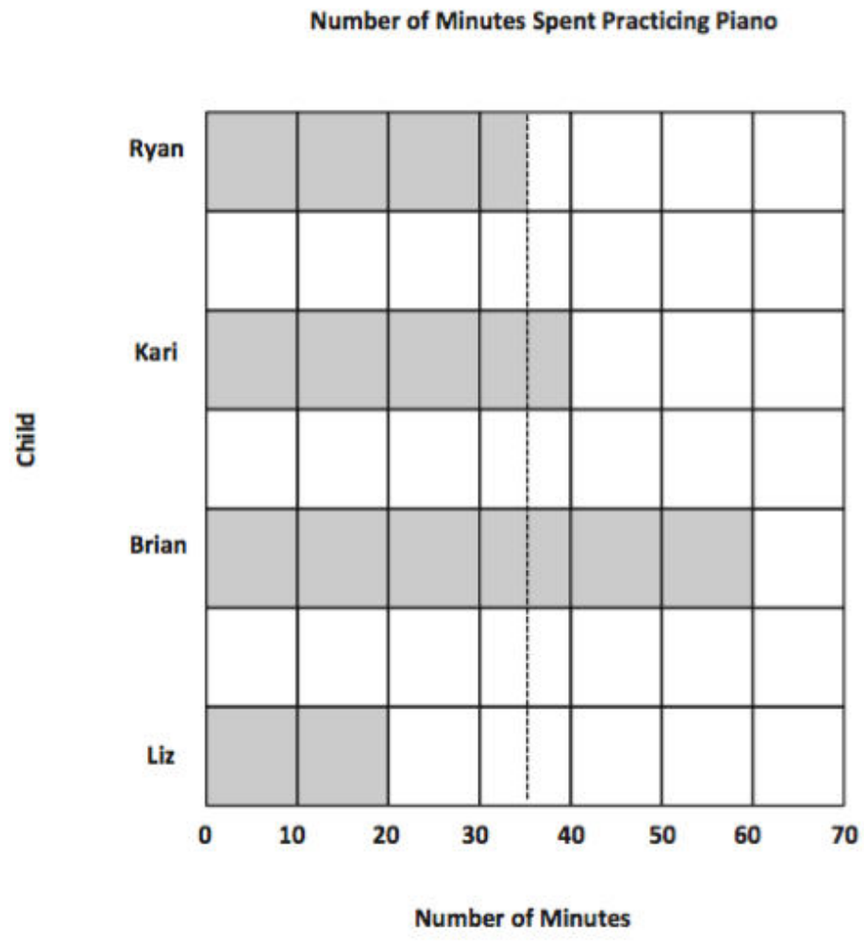
Write a number sentence to show how many third graders have 3 or 4 children in their family.

How many third graders have 1 or 2 children in their family?

How many third graders have a sibling?

Fluency Practice

Read Bar Graphs (5 min.)

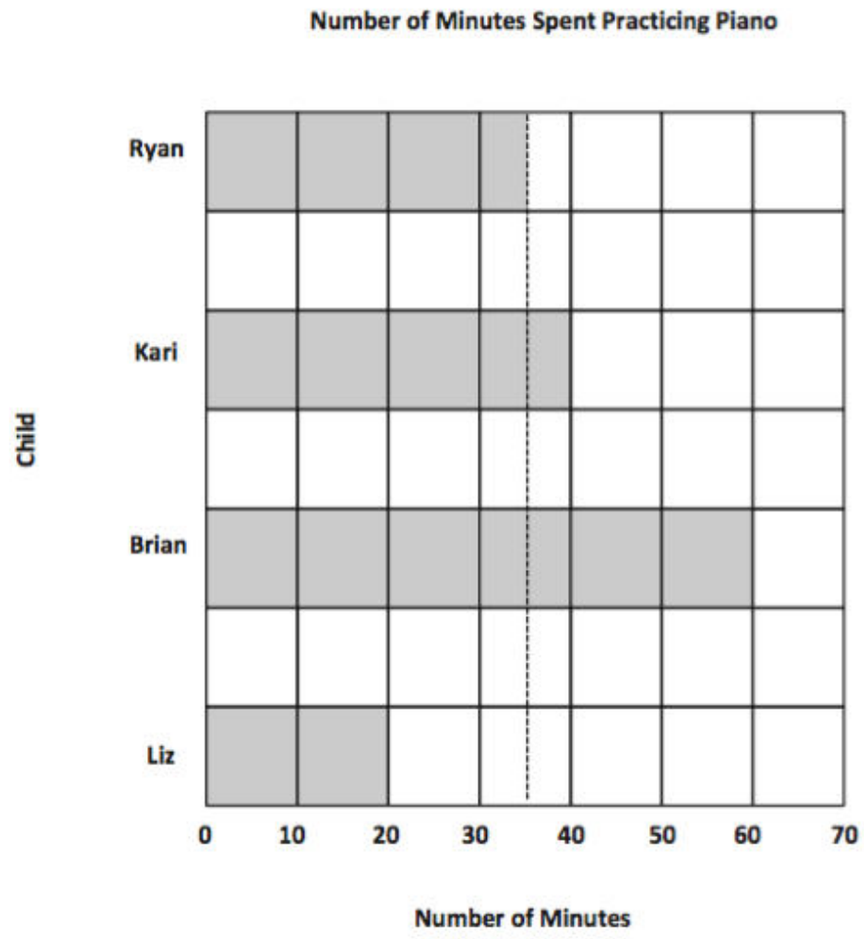


This bar graph shows how many minutes 4 children spent practicing piano.

Did Ryan practice for more or less than 30 minutes?

Fluency Practice

Read Bar Graphs (5 min.)

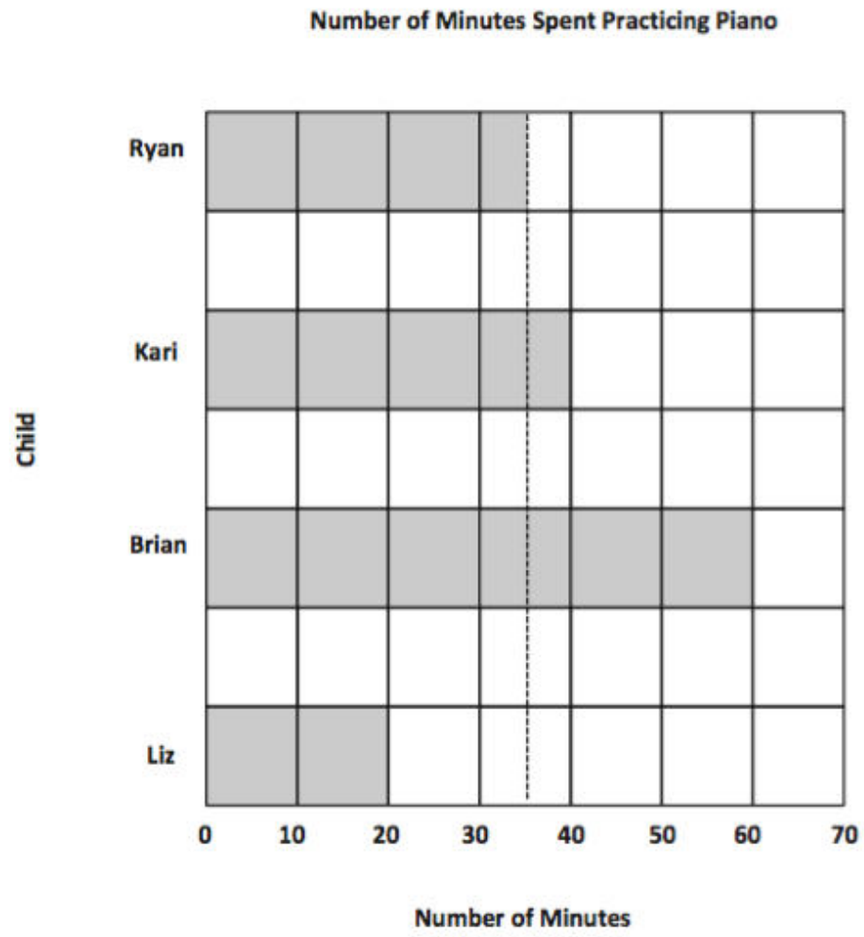


Did Ryan practice for more or less than 40 minutes?

What fraction of the time between 30 and 40 minutes did Ryan practice piano?

Fluency Practice

Read Bar Graphs (5 min.)



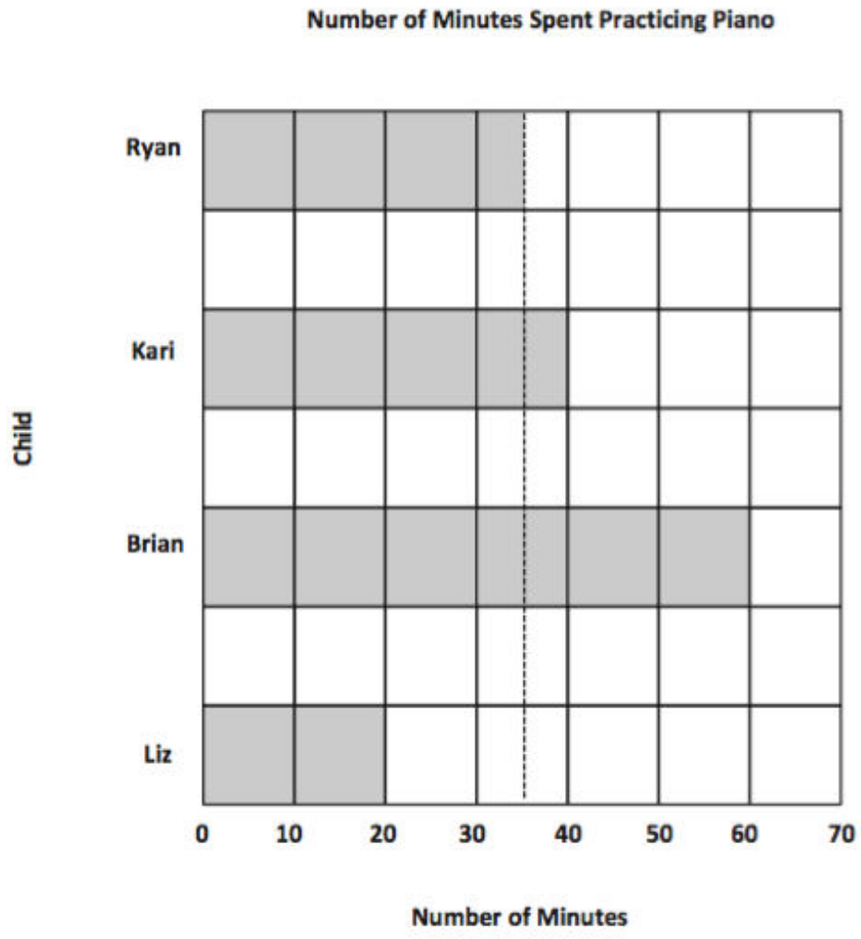
What is halfway between 30 minutes and 40 minutes?

The dotted line is there to help you read 35 since 35 is between two numbers on the graph.

How long did Kari spend practicing piano?

Fluency Practice

Read Bar Graphs (5 min.)

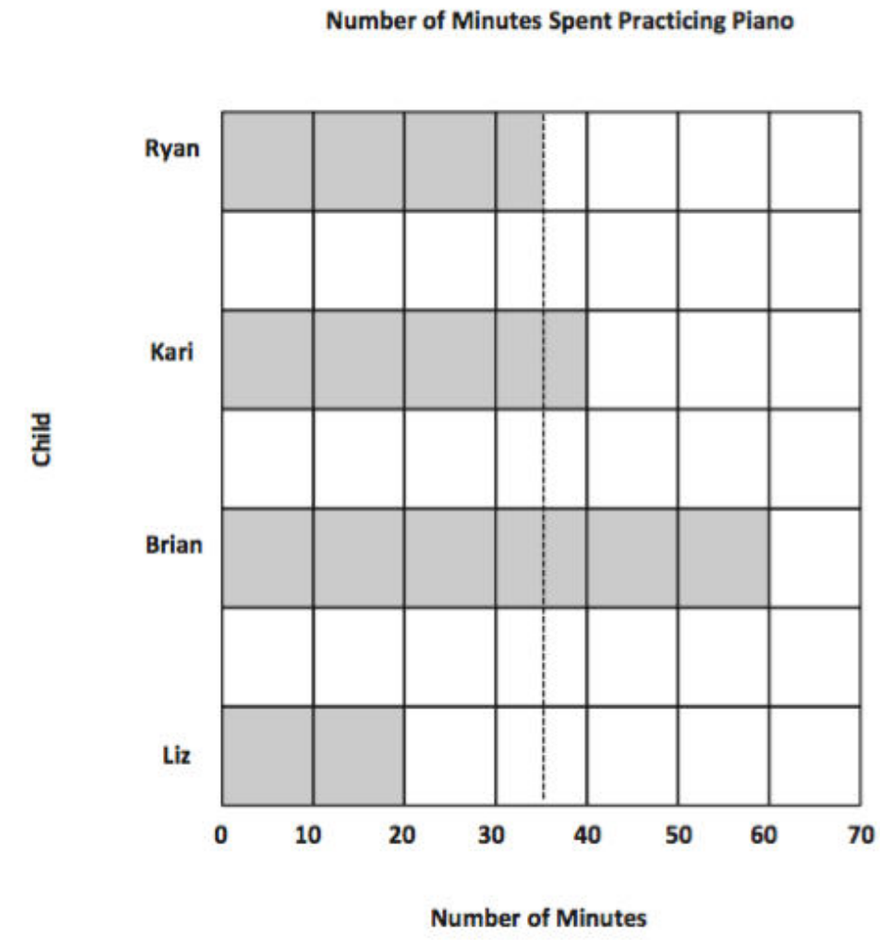


How long did Brian spend practicing piano?

How long did Liz spend practicing piano?

Fluency Practice

Read Bar Graphs (5 min.)



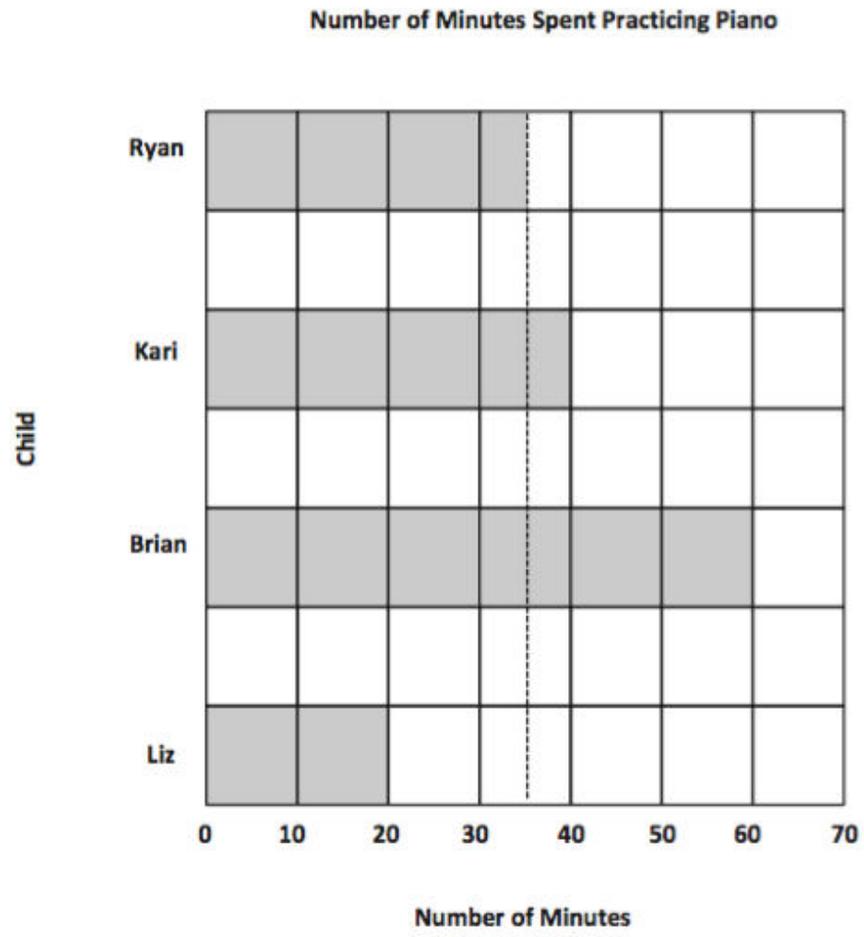
Who practiced the longest?

Who practiced the least amount of time?

On your personal white board, write a number sentence to show how much longer Brian practiced than Kari.

Fluency Practice

Read Bar Graphs (5 min.)

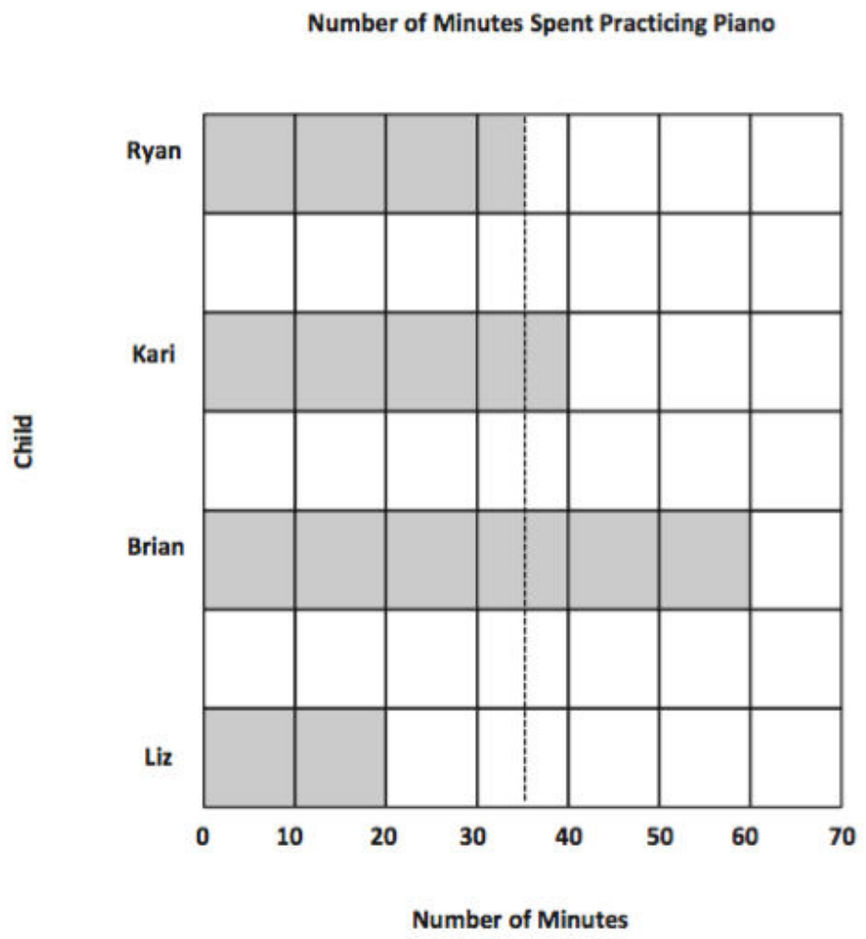


How many fewer minutes did Ryan practice than Brian?

Write a number sentence to show how many fewer minutes Ryan practiced than Brian.

Fluency Practice

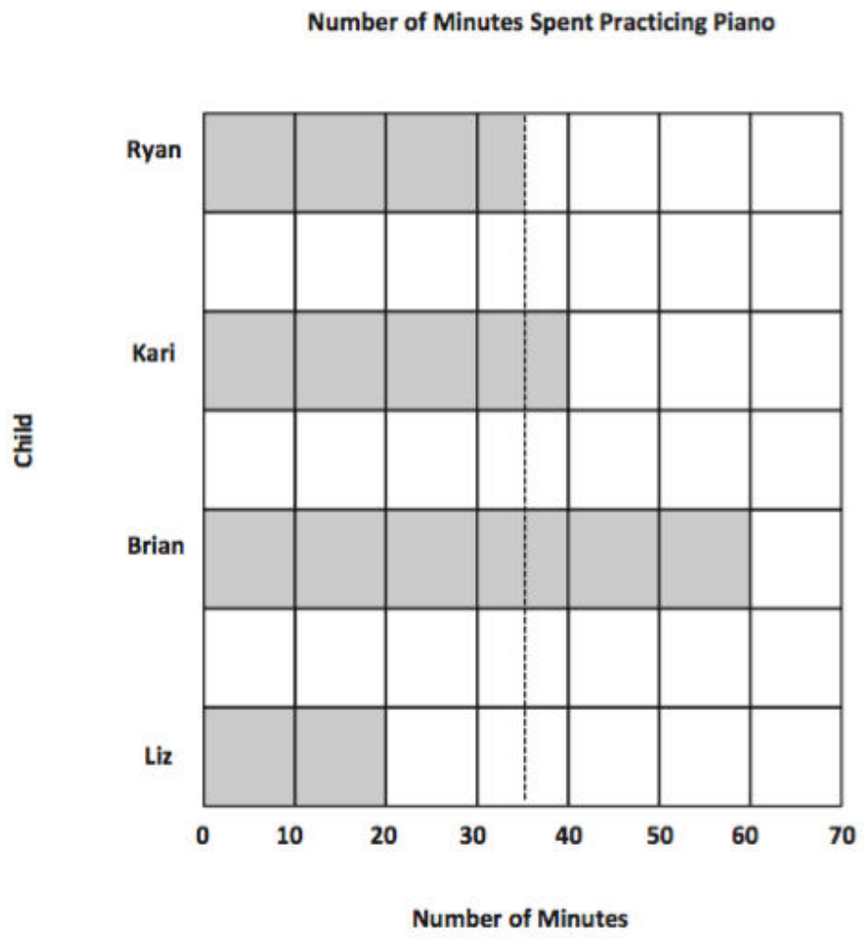
Read Bar Graphs (5 min.)



Write a number sentence to show how many total minutes Kari and Liz spent practicing piano.

Fluency Practice

Read Bar Graphs (5 min.)



How many total minutes did Ryan and Brian spend practicing piano?

How many total minutes did all the children practice?

Application Problem

Wing Vibrations of Insects	
Insect	**Number of Wing Vibrations Each Second**
Honeybee	350
Beetle	b
Fly	550
Mosquito	m

The chart shows the number of times an insect's wings vibrate each second. Use the following clues to complete the unknowns in the chart.

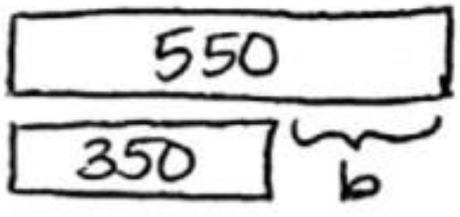
A. The beetle's number of wing vibrations is the same as the difference between the fly's and honeybee's.
B. The mosquito's number of wing vibrations is the same as 50 less than the beetle's and fly's combined.

Application Problem

Wing Vibrations of Insects	
Insect	**Number of Wing Vibrations Each Second**
Honeybee	350
Beetle	b
Fly	550
Mosquito	m

A. The beetle's number of wing vibrations is the same as the difference between the fly's and honeybee's.

a)



$550 - 350 = b$

$b = 200$

b represents the number of beetle's wing vibrations

A beetle's wings vibrate 200 times each second.

Application Problem

Wing Vibrations of Insects	
Insect	**Number of Wing Vibrations Each Second**
Honeybee	350
Beetle	*b*
Fly	550
Mosquito	*m*

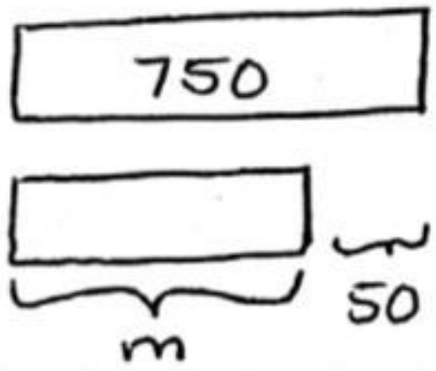
B. The mosquito's number of wing vibrations is the same as 50 less than the beetle's and fly's combined.

b)

v = 200 + 550

v = 750

v represents the total vibrations of beetle and fly.



750 - 50 = m

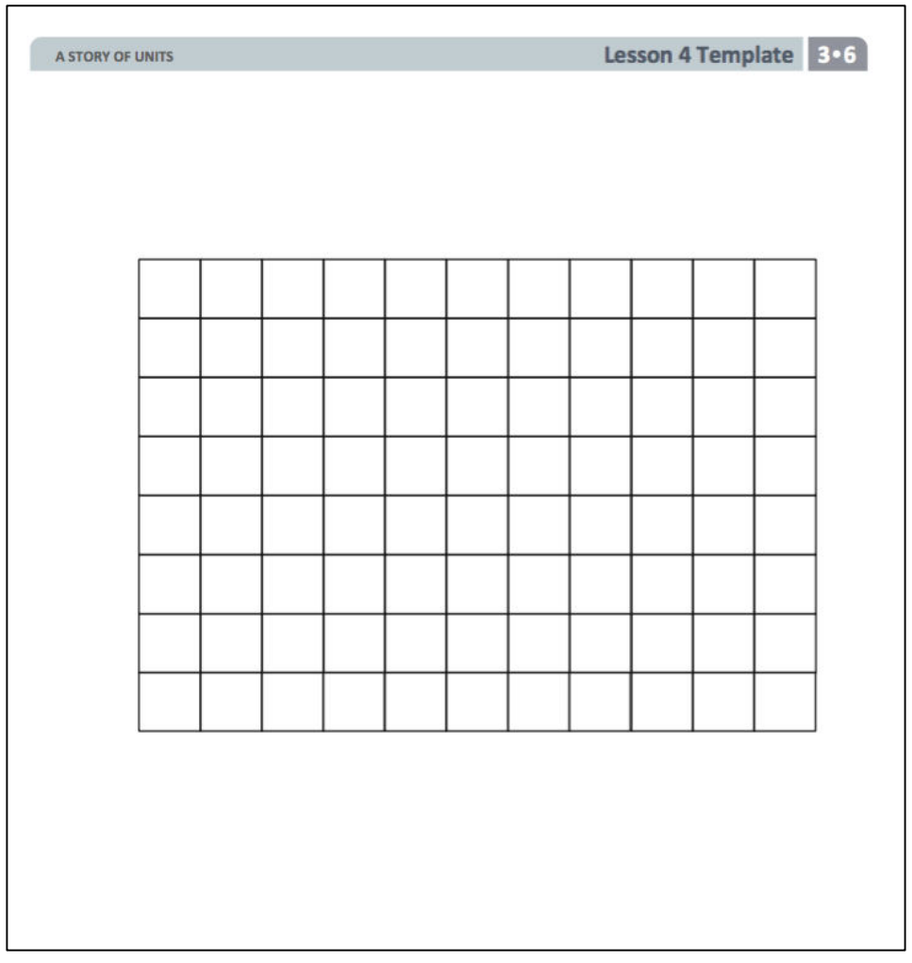
m = 700

m represents the number of mosquito's wing vibrations.

A mosquito's wings vibrate 700 times each second.

Concept Development

Students will need: Graph (Template) pictured below, personal white board



Concept Development

Let’s create a bar graph from the data in the Application Problem.

We need to choose a scale that works for the data the graph represents.

Talk to a partner: What scale would be best for this data? Why?

Concept Development

In this case, using hundreds is a strong choice since the numbers are between 200 and 700.

Decide if you will show the scale for your graph vertically or horizontally.

Then, label it starting at zero.

Concept Development

The number of wing vibrations for the honeybee is 350 each second.

Discuss the bar you will make for the honeybee with your partner. How many units will you shade in?

Concept Development

Many of you noticed that you need to shade a half unit to show this data precisely.

Do you need to do the same for other insects?

Go ahead and shade your bars.

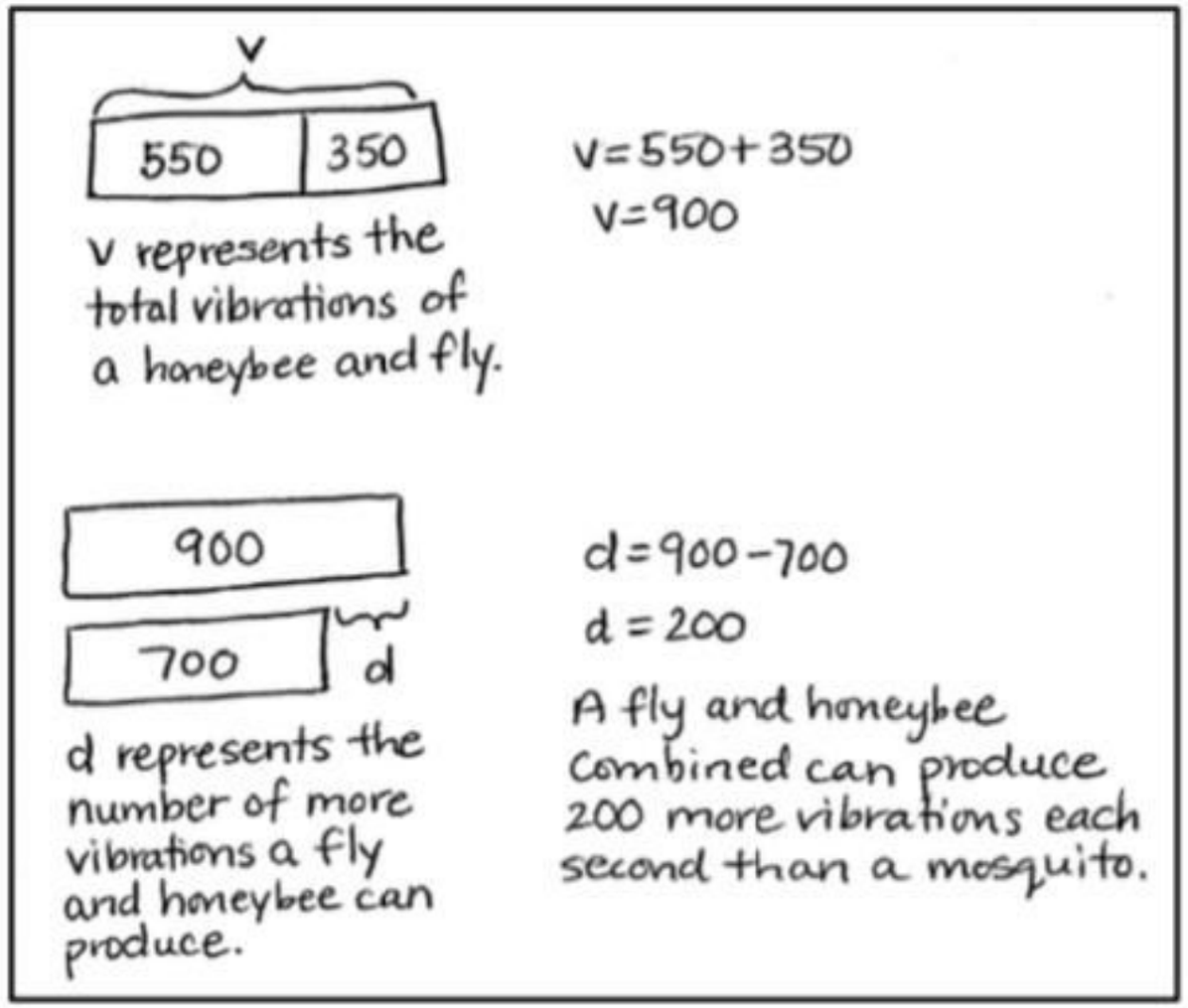
Concept Development

On your personal white board, write a number sentence to find the total number of vibrations 2 beetles and 1 honeybee can produce each second.

350 + 200 + 200 = 750

Concept Development

Use a tape diagram to compare how many more vibrations a fly and honeybee combined produce than a mosquito.



Concept Development

Work with your partner to think of another question that can be solved using the data on this graph.

Solve your question, and then trade questions with the pair of students next to you.

Solve the new question, and check your work with their work.

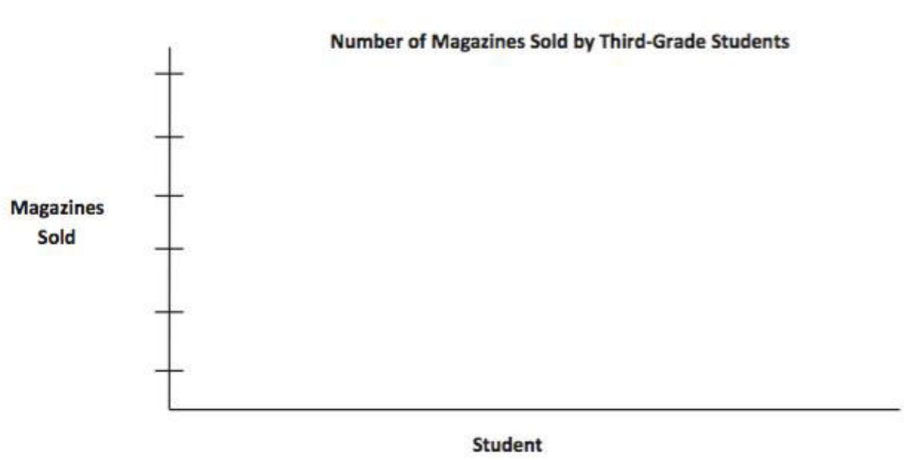
Problem Set (10 min.)

Name _____ Date _____

1. The chart below shows the number of magazines sold by each student.

Student	Ben	Rachel	Jeff	Stanley	Debbie
Magazines Sold	300	250	100	450	600

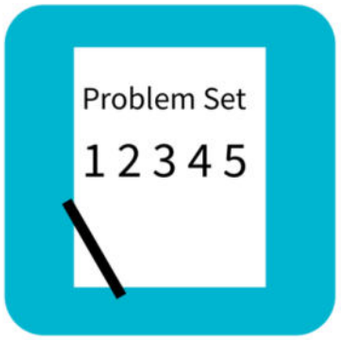
a. Use the chart to draw a bar graph below. Create an appropriate scale for the graph.



b. Explain why you chose the scale for the graph.

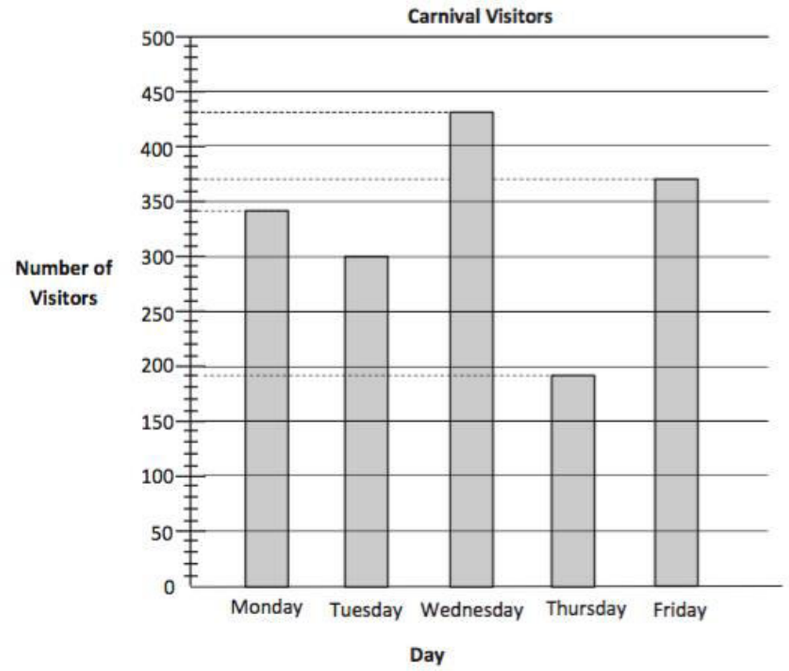
c. How many fewer magazines did Debbie sell than Ben and Stanley combined?

d. How many more magazines did Debbie and Jeff sell than Ben and Rachel?



Problem Set (10 min.)

2. The bar graph shows the number of visitors to a carnival from Monday through Friday.



a. How many fewer visitors were there on the least busy day than on the busiest day?

b. How many more visitors attended the carnival on Monday and Tuesday combined than on Thursday and Friday combined?

Debrief

Invite students who used different scales for Problem 1 to share their work.

How did you solve Problem 1(c)? What did you do first?

What is the value of each interval in the bar graph in Problem 2? How do you know?

Debrief

How did you solve Problem 2(a)?

Explain to your partner what you needed to do before answering Problem 2(b).

Compare the chart from the Application Problem with the bar graph you made of that same data. How is each representation a useful tool? When might you choose to use each representation?

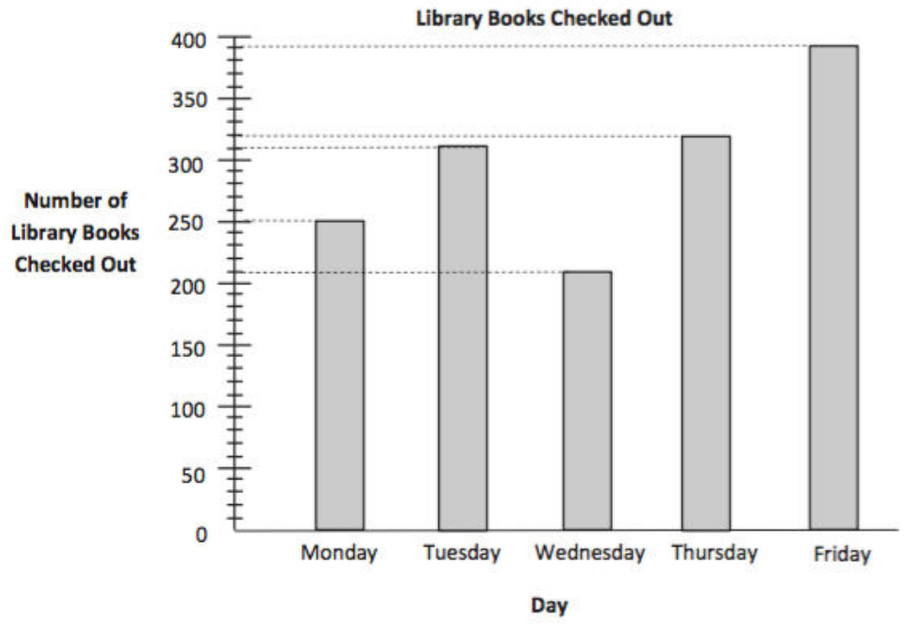
Debrief

How did the fluency activity, Read Bar Graphs, help you get ready for today's lesson?

Exit Ticket (3 minutes)

Name _____ Date _____

The graph below shows the number of library books checked out in five days.



c. How many books in total were checked out on Wednesday and Thursday?

d. How many more books were checked out on Thursday and Friday than on Monday and Tuesday?