Essential Question(s):

- How do you use a ruler to measure lengths to the nearest inch and record the data on a line plot?
- How can you draw and interpret scaled picture and bar graphs?
- How can you solve problems using data represented in scaled bar graphs?

Learning Goal(s):

Students will be able to:

- **Draw** scaled picture graphs and bar graphs with several categories.
- **Solve** one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.
- **Use** rulers to measure lengths to the nearest inch.
- **Show** data by making a line plot, where the horizontal scale is marked off in whole numbers.

MATH SCALE

SCALE	**Description of Learning:** *I can…*
4	• **Create** a real-world situation that could be described by a provided line plot, picture graph, or bar graph. • **Justify** my reasoning for using a certain graph to depict my real-world scenario.
3	• **Draw** scaled picture graphs and bar graphs with several categories. • **Solve** one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. • **Use** rulers to measure lengths to the nearest inch. • **Show** data by making a line plot, where the horizontal scale is marked off in whole numbers.
2	• **Recognize** scaled picture graphs and scaled bar graphs. • **Identify** how much each picture or bar represents on a graph. • **Locate** information on a line plot • **Identify** inches on a ruler.
1	• **Understand** and **identify** examples of the following vocab words: bar graph, data, data set, frequency table, inch, line plot, picture graph, ruler, scale (on a graph)

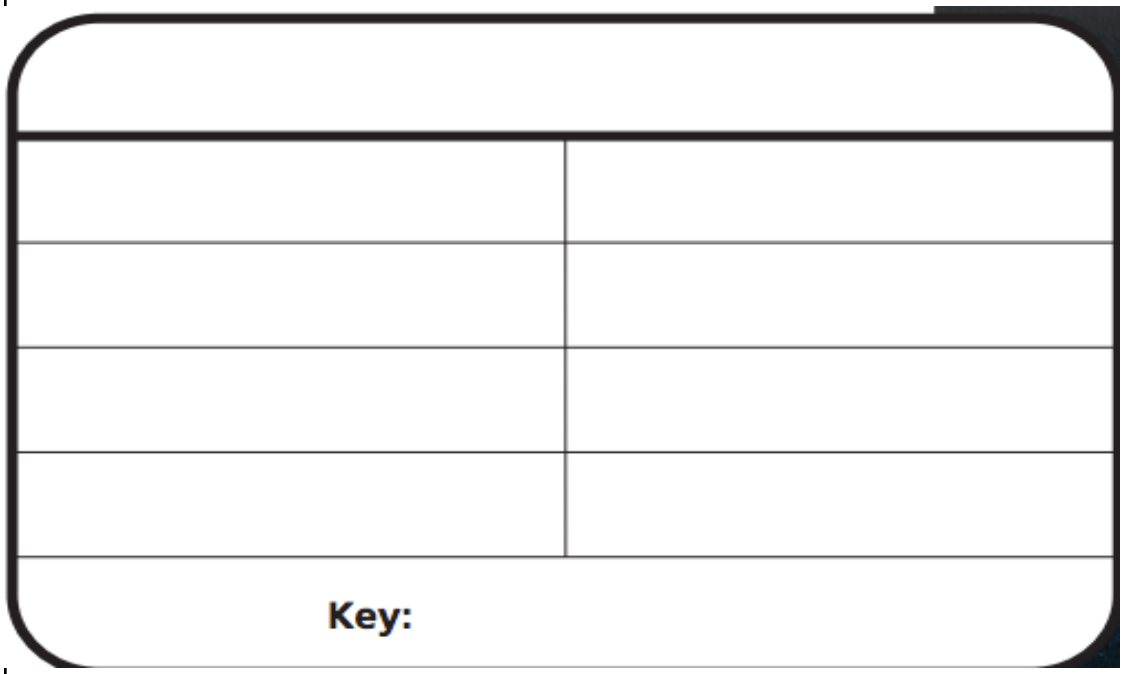
Day 1

I DO

Sarah recorded the places the third grade classes would like to go during a field trip.

Field Trip Choices	
Place	**Number**
Museum	6
Science Center	15
Aquarium	12
Zoo	9

Part 1: Use the data above to construct a picture graph.



Part 2: Solve these problems based on the picture graph.

1. How many fewer students chose the Museum than the Aquarium?

   _____

2. How many more students chose the Aquarium or Zoo than the Science Center?

   _____

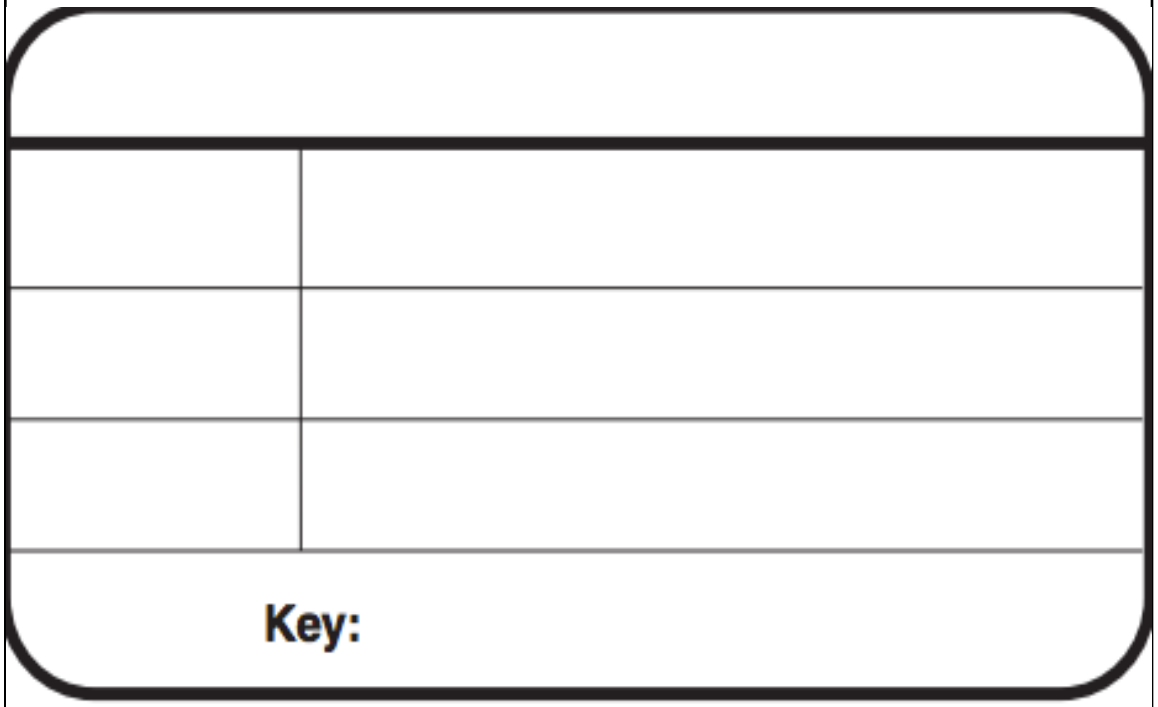
Day 1

WE DO

Sam pulled marbles from a bag one at a time, recorded their color, and then put them back.

Sam's Marble Experiment	
Color	**Number**
Blue	4
Green	11
Red	8

Part 1: Use the data above to construct a picture graph.



Part 2: Solve these problems based on the picture graph.

1. How many fewer marbles were blue than green?

   _____

2. How many more red or blue marbles are there than green?

   _____

Day 1

YOU DO

Third grade students visited the Orlando Science Center. They recorded their favorite exhibit in the tally table to the right.

Favorite Exhibit	
Exhibit	**Tally**
Nature	𝍸 |
Solar System	𝍸 |||
Light and Sound	𝍸 𝍸 ||||
Human Body	𝍸 |||

Part 1: Use the data above to construct a picture graph.

Key:

Part 2: Solve these problems based on the picture graph.

1. How many fewer students chose the Solar System exhibit as their favorite compared to the Light and Sound exhibit?

   _____

2. How many more students chose the Human Body exhibit or Nature exhibit compared to Solar System exhibit?

   _____

Day 2

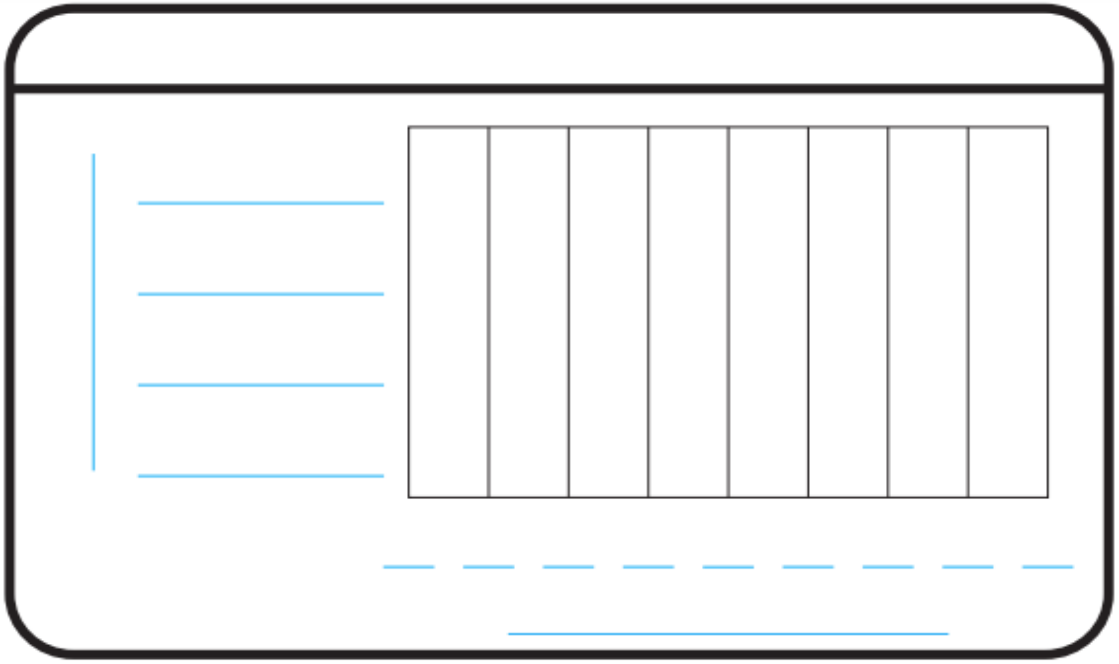
I DO

Henry took a survey of his friends' favorite team sports. He recorded the results in the table at the right.

Favorite Team Sport

Sport	Tally
Soccer	𝍸 𝍸 ||
Basketball	𝍸
Baseball	𝍸 𝍸 𝍸
Football	𝍸 𝍸

Part 1: Use the data above to construct a bar graph.



Part 2: Solve these problems based on the bar graph.

1. How many fewer people chose basketball compared to baseball?

   _____

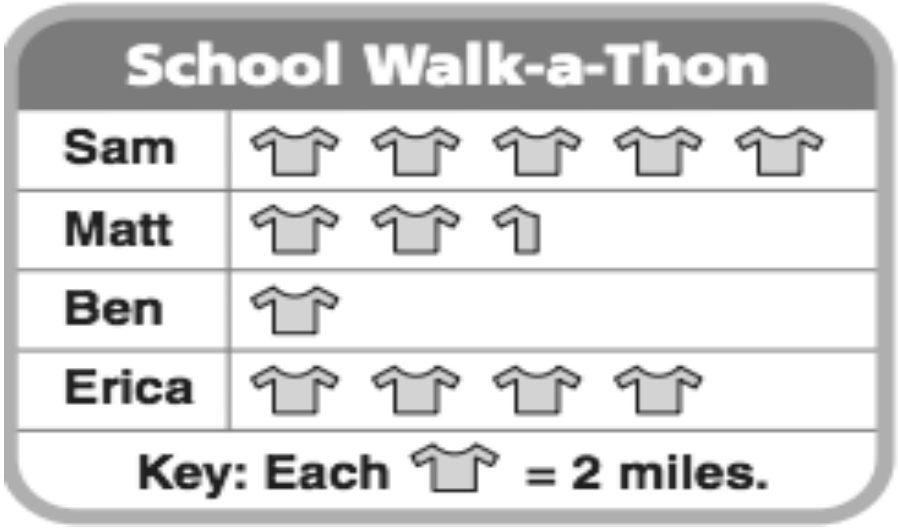
2. How many more people chose soccer, basketball, or baseball than football?

   _____

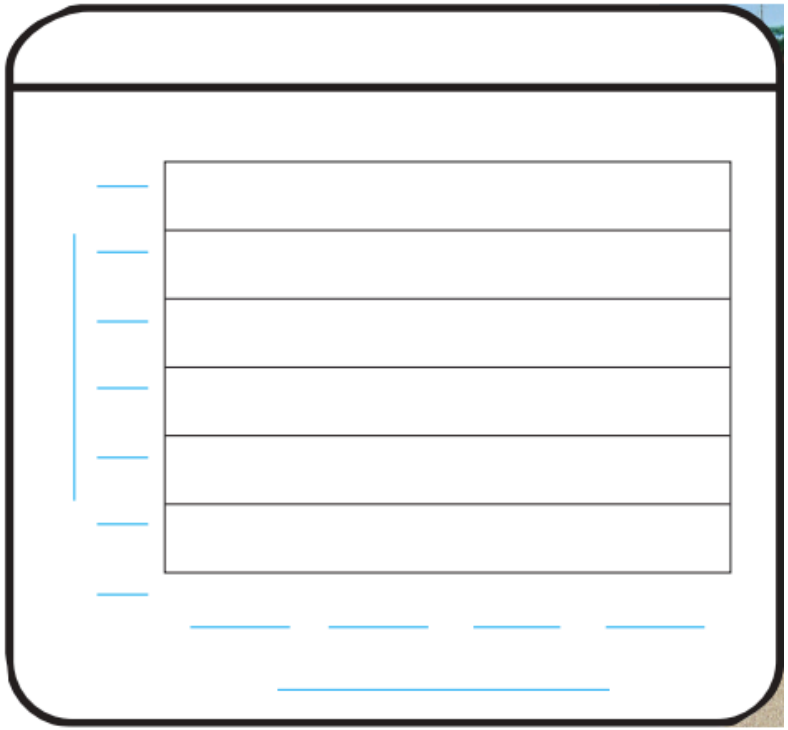
Day 2

WE DO

Matt's school is having a walk-a-thon to raise money for the school library. Matt made a picture graph to show the number of miles some students walked.



Part 1: Use the data above to construct a bar graph.



Part 2: Solve these problems based on the bar graph.

1. How many fewer miles did Matt walk compared to Sam?

   _____

2. How many more miles did Ben and Erica walk combined than Matt?

   _____

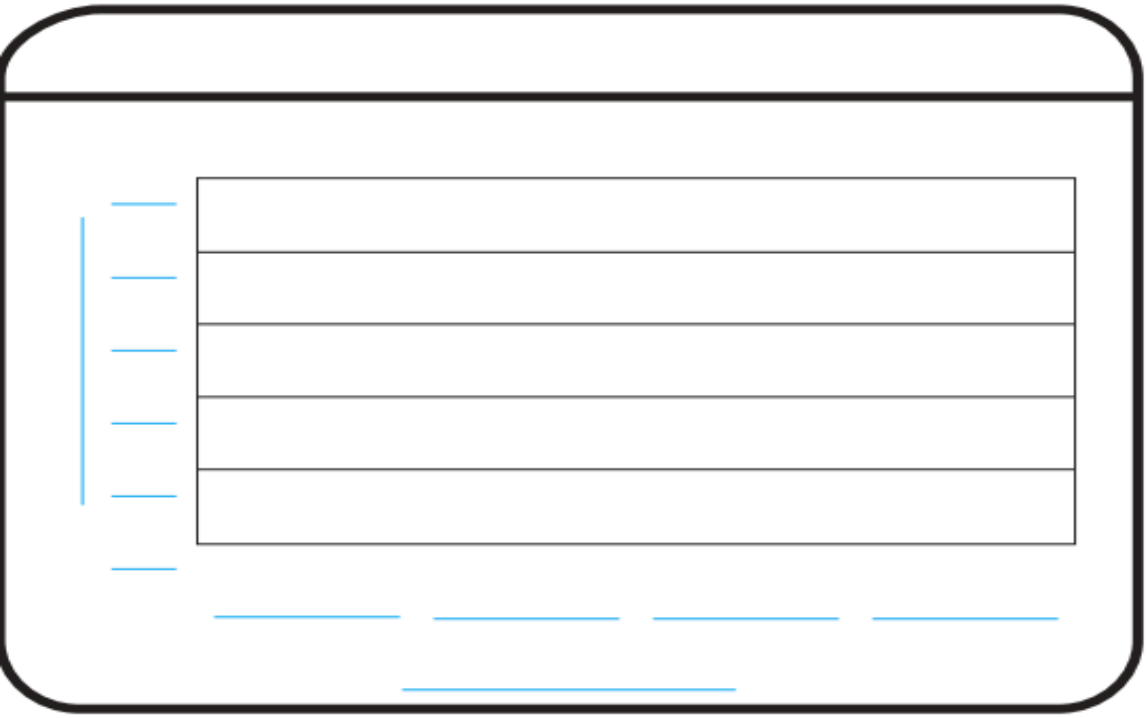
YOU DO

Day 2

Kydia and Joey did an experiment with a spinner. Lydia recorded the result of each spin in the table at the right.

Spinner Results	
Color	**Tally**
Red	𝍸 𝍸 𝍸 |
Yellow	𝍸 |||
Blue	𝍸 𝍸 ||
Green	𝍸 𝍸

Part 1: Use the data above to construct a bar graph.



Part 2: Solve these problems based on the bar graph.

1. How many fewer times did the spinner land on yellow than blue?

   _____

2. How many more times did the spinner land on blue, green, and yellow combined than red?

   _____

Day 3

I DO

Part 1: Measure the length of 6 picture books to the nearest inch.

Length in Inches	
Number of Inches	Tally

Part 2: Use the data to construct a line plot.

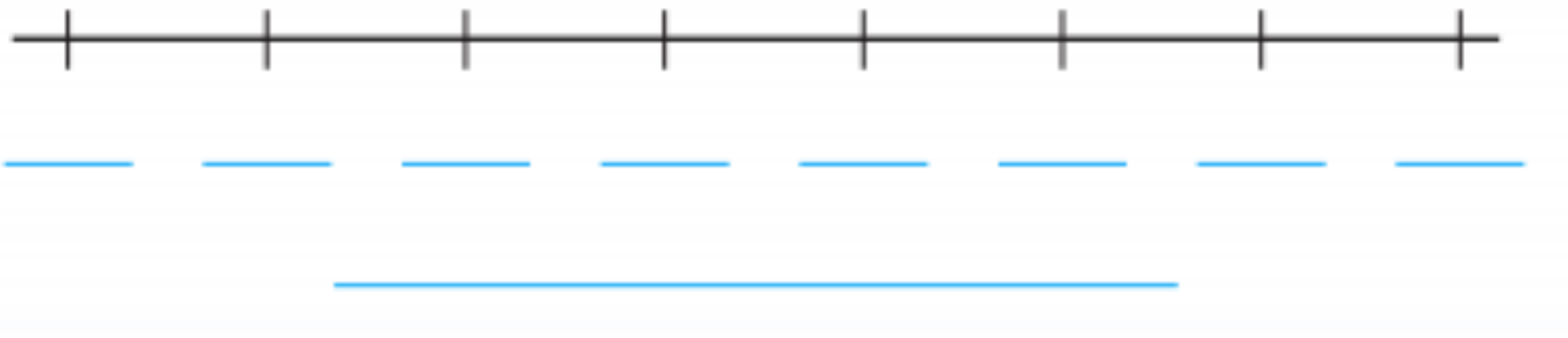
Day 3

WE DO

Part 1: Measure the thumb length of 6 classmates to the nearest inch.

Height in Inches	
Number of Inches	Tally

Part 2: Use the data to construct a line plot.



Day 3

YOU DO

Part 1: Measure the lines below to the nearest inch. Then record your data in the chart to the right.

Length in Inches	
Number of Inches	Tally

Part 2: Use the data to construct a line plot.

Day 4

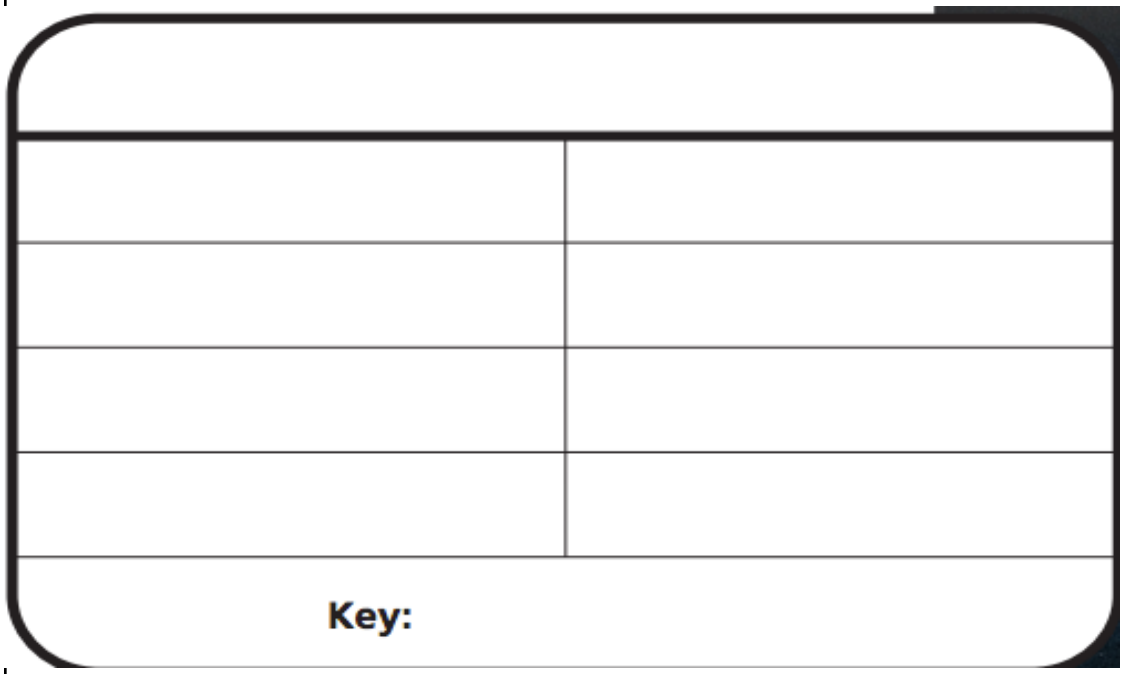
I DO

Windy Ridge students learned how many teeth some animals have.

Teeth in Mammals

Animal	Number
Hamster	16
Cat	30
Dog	42
Cow	32

Part 1: Use the data above to construct a picture graph.



Part 2: Solve these problems based on the picture graph.

1. How many fewer teeth do the hamsters have than the cat?

   _____

2. How many more teeth do the hamster, cat, and dog have combined compared to the cow? _____

Day 4

WE DO

Part 1: Measure the length of 6 of your classmates feet to the nearest inch.

Length in Inches	
Number of Inches	Tally

Part 2: Use the data to construct a line plot.

Day 4

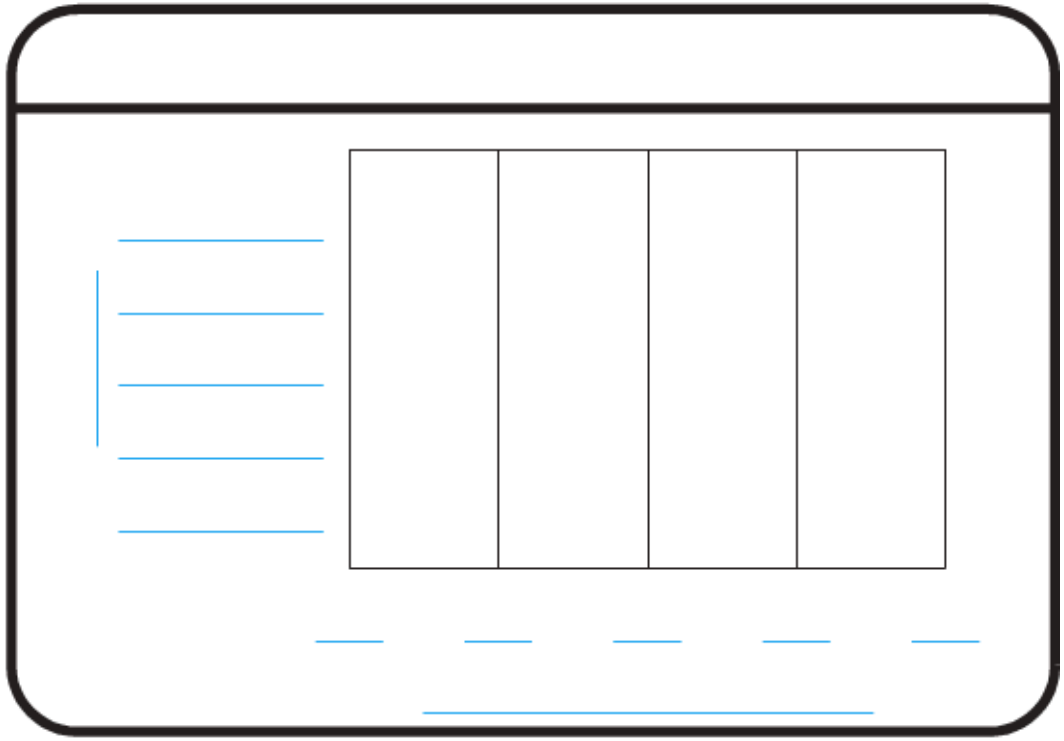
YOU DO

Susie recorded the number of points some basketball players scored.

Points Scored

Player	Number of Points
Billy	10
Dwight	30
James	15
Raul	25
Sean	10

Part 1: Use the data above to construct a bar graph.



Part 2: Solve these problems based on the bar graph.

1. How many fewer points did James score than Dwight?

   _____

2. How many more points did James and Raul score compared to Billy and Dwight?

   _____

Examples of Surveys:

- Favorite/least favorite movie, book, video game, board game
- Types of animals at home
- Team sports
- Afterschool activities
- Age of siblings
- Numbers of siblings
- Hours spent reading at home
- There are a ton more, so get creative!

Day 5 - Project

Part 1: Create a survey.	**Part 2**: Collect the data using a frequency table.
Part 3: Decide which type of graph (picture, bar, line plot) is the best method for representing your data and construct it here.	**Part 4:** Ask and solve 2-3 “How many fewer” or “How many more” questions.
Part 5: Describe how you decided the best method for representing your data.	