

20 Days of Lesson
Plans and Activities

2ND
grade



the MAGIC Of MATH
DATA ANALYSIS

by Hope King and Amy Lemons

DATA & GRAPHS

OVERVIEW

	FOCUS	STANDARD
WEEK 1	Bar Graphs	TEKS: 2.10ABCD CC: 2.MD.D.10
WEEK 2	Pictographs	TEKS: 2.10ABCD CC: 2.MD.D.10
WEEK 3	Line Plots, Relate to Measurement	TEKS: 2.10ABCD CC: 2.MD.D.9
WEEK 4	Solving Word Problems with Data and Graphs	TEKS: 2.10CD CC: 2.MD.D.10

DAILY LESSON PLANS

-20 Days of Lesson Plans for:

Week 1: Bar Graphs

Week 2: Pictographs (COMING SOON)

Week 3: Line Plots (COMING SOON)

Week 4: Word Problems (COMING SOON)

BAR GRAPHS		BAR GRAPHS		
FOCUS		FOCUS	OBJECTIVE	MATERIALS
gathering data and creating bar graphs		gathering data and creating bar graphs	I can read and create bar graphs.	Sticky Notes
VOCABULARY		VOCABULARY WORDS	WORD PROBLEM	
SURVEY, BAR GRAPH, TITLE, DATA		SURVEY, BAR GRAPH, TITLE, LABELS, DATA	Read and label the data in the bar graph to make it clear. What other data points compare? Explain your thinking.	
MINILESSON		MINILESSON	ACTIVITY	ASSESSMENT
<p>Begin by introducing a bar graph using provided Explain to students that a bar is collected data.</p> <p>Go through the five steps of creating a bar graph using the example graphs. Keep these arrows as your guide to create your class graph!</p> <p>Practice creating bar graphs using today's "Would You Rather..." Introduce today's "Would You Rather..."</p> <p>Go through the steps of creating a bar graph</p> <p>1. Collect Data Give each student a sticky note and allow them to write their choice.</p> <p>2. Title: Glue the title to the top of your chart paper.</p> <p>3. Add numbers: tell students that you will add your numbers after the data is displayed.</p> <p>4. Add labels: add your labels to the bottom of your chart paper.</p> <p>5. Draw graph: Allow students to come and place their sticky notes into the chart paper.</p> <p>6. Go back and add your numbers to the side.</p> <p>Now use the graphing question stems to introduce interpreting graphs. Today model</p>		<p>Today to</p> <p>Practice creating bar graphs using today's "Would You Rather..." Introduce today's "Would You Rather..."</p> <p>Go through the steps of creating a bar graph</p> <p>1. Collect Data Give each student a sticky note and allow them to write their choice.</p> <p>2. Title: Glue the title to the top of your chart paper.</p> <p>3. Add numbers: tell students that you will add your numbers after the data is displayed.</p> <p>4. Add labels: add your labels to the bottom of your chart paper.</p> <p>5. Draw graph: Allow students to come and place their sticky notes into the chart paper.</p> <p>6. Go back and add your numbers to the side.</p> <p>Now use the graphing question stems to introduce interpreting graphs. Today's focus should be on identifying how many more/less in a certain category has than another.</p> <p>Use verb cards to model comparing and counting on or down to find out how many more or how many fewer.</p>	<p>STRIKE ZONE:</p> <p>Place the students into groups of 3 and give each group 10 paper cups.</p> <p>The students will play a game of bowling and graph their data for the number of pins knocked down each time.</p> <p>The students will set up 10 paper cups (bowling pins).</p> <p>They will take turns bowling. Each time a student bowls, they will graph their data (the number of pins they knock down). They will continue until each student has bowled 5 times.</p> <p>Then they will compare their graphs and answer the questions.</p>	<p>Students complete the graphing quick check.</p>

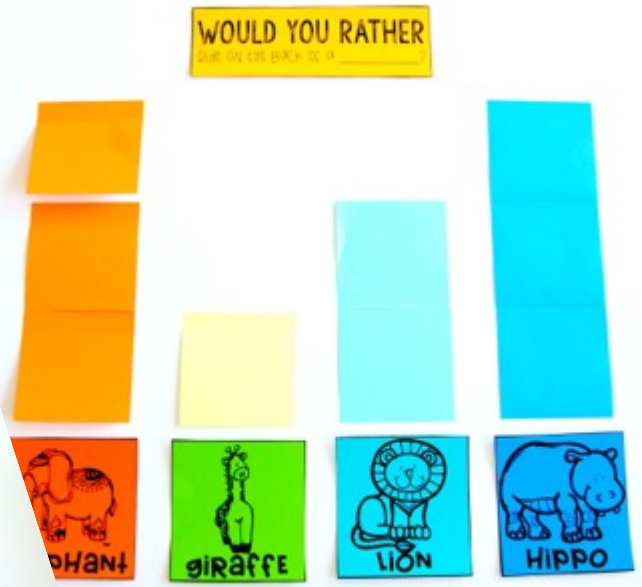
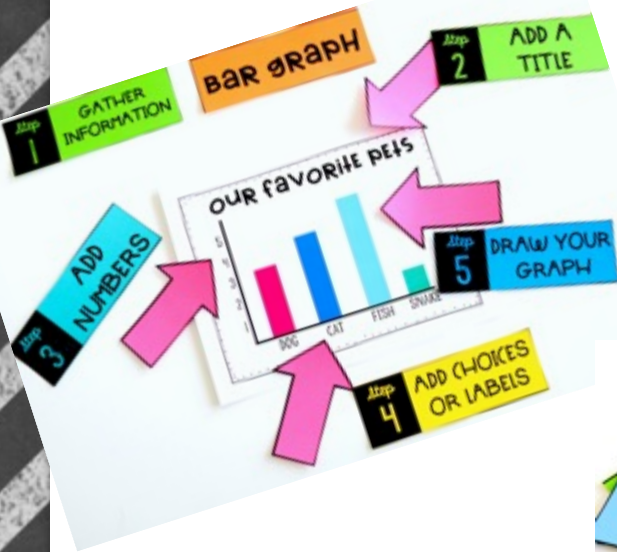
WEEK ONE:

both

graphs

DAY 1

Minilesson: Intro to Bar Graphs



Activity: Don't Burst My Bubble

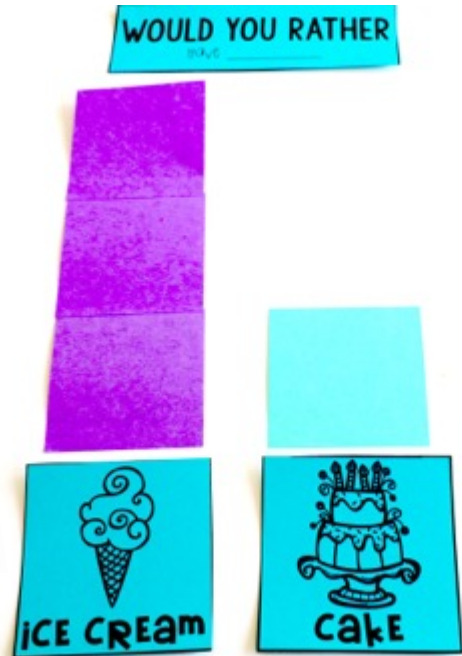


Interactive Notebooks: The students interpret bar graphs.



DAY TWO

Minilesson: Would you rather...bar graph practice



Activity: Free Throw Graphing

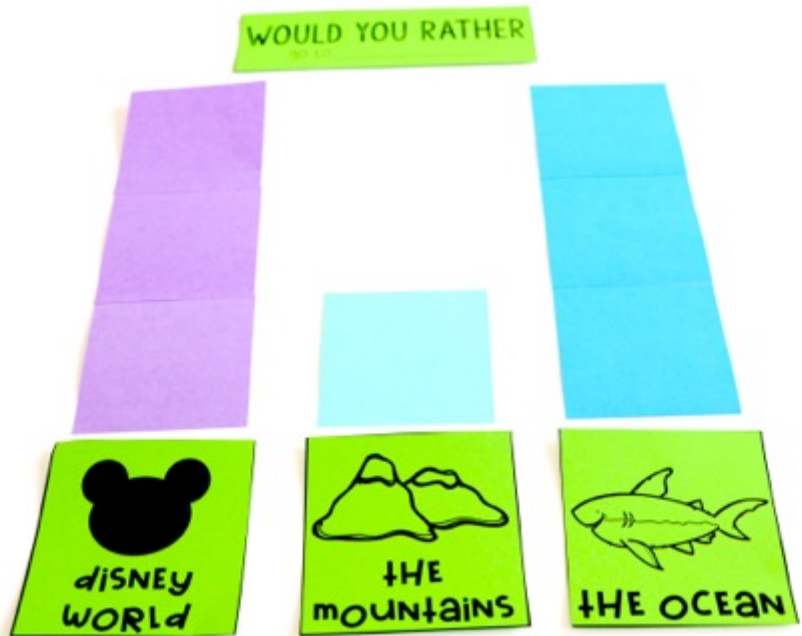


Interactive Notebooks: Students interpret bar graphs by answering questions.



DAY THREE

Minilesson: Would you rather...bar graph practice. Note...make today's graph horizontal rather than vertical.



Activity: Our Favorite Pizza

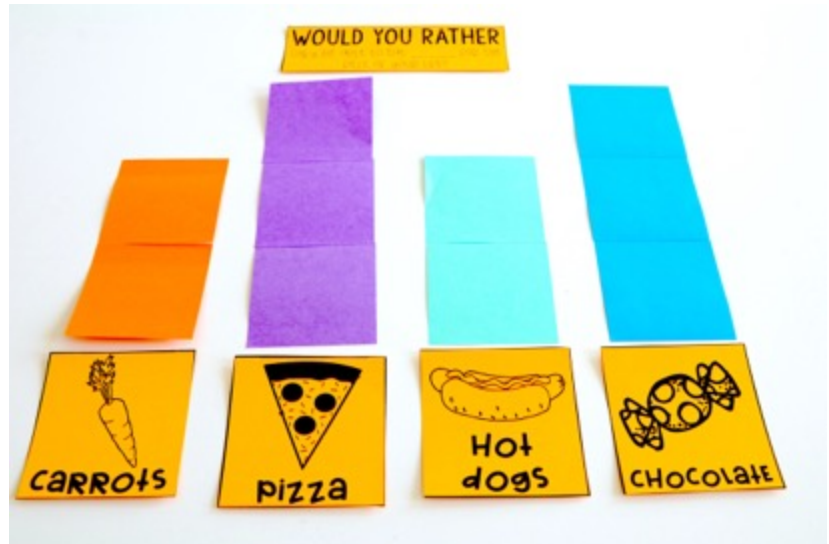


Interactive Notebooks:
Students interpret a bar graph and answer questions.



DAY FOUR

Minilesson: Would you rather...bar graph practice.



Activity: Finger Twister

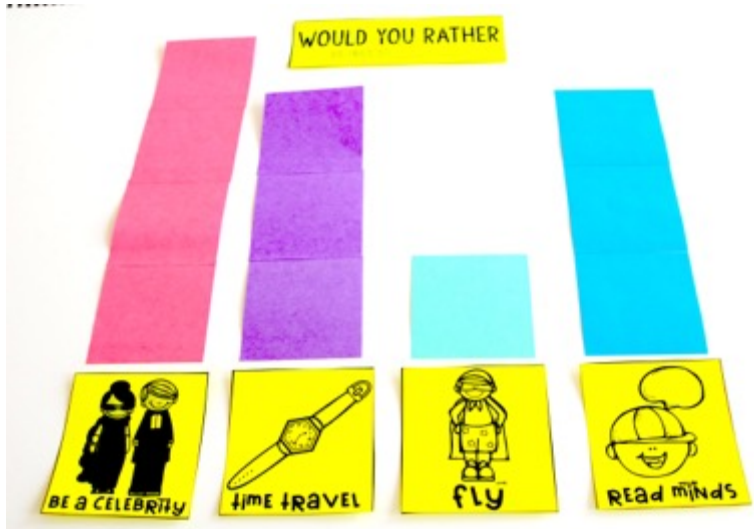


Interactive Notebooks:
Students interpret a bar graph and answer questions.



DAY FIVE

Minilesson: Would you rather bar graph practice.



Activity: Bowl and Graph



Assessment: Students complete the graphing quick check.



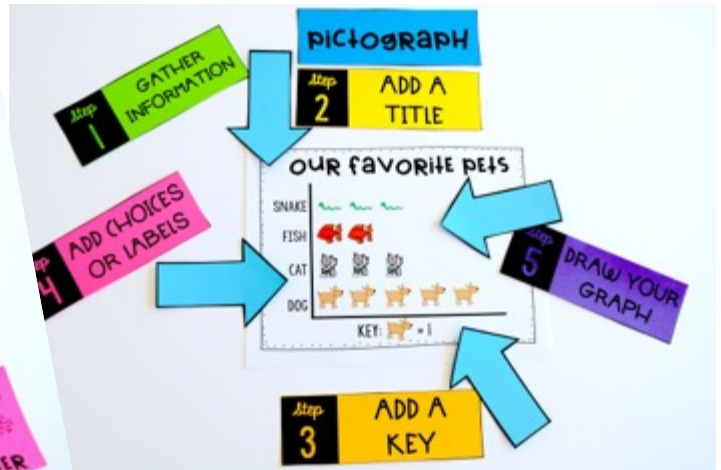
WEEK TWO:

pic+o-

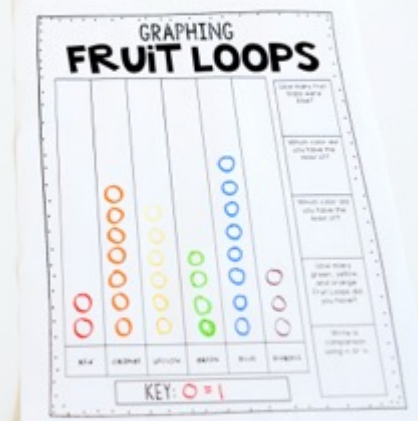
graphs

DAY ONE

Minilesson: Introduction to Pictographs



Activity: A Colorful Pictograph

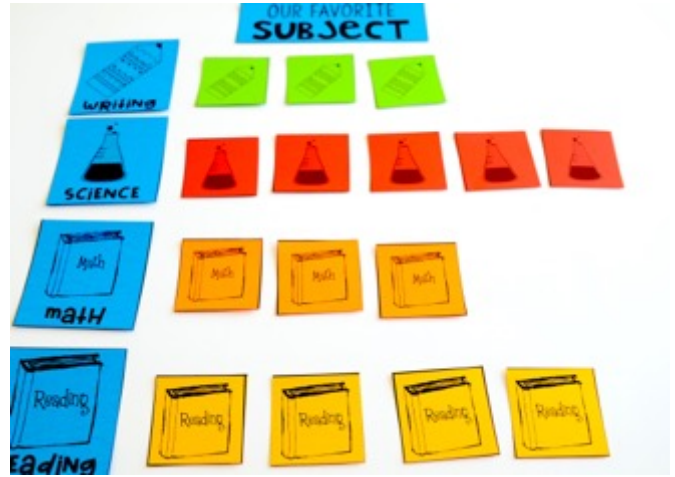


Interactive Notebooks:
Students practice interpreting pictographs.



DAY TWO

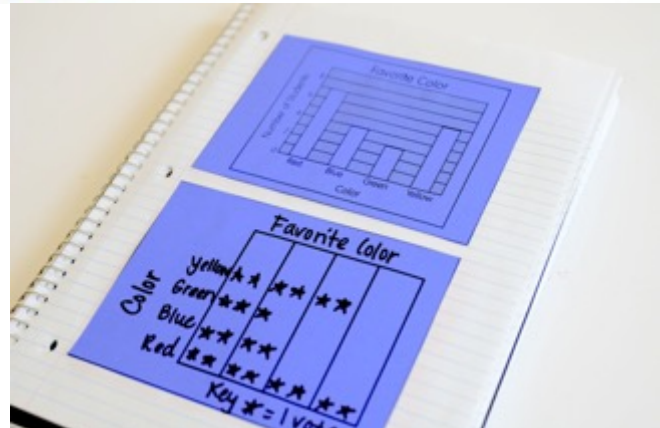
Minilesson: Students survey the class to vote on a favorite subject.



Activity: Taste The Rainbow



Interactive Notebooks: Students take the data from a bar graph and create a pictograph.



DAY THREE

Minilesson: Students survey the class to vote on a favorite sport.



Activity: Monster Burger Graph



Interactive Notebooks:
Students interpret the pictograph by comparing the data.



DAY FOUR

Minilesson: Students survey the class to vote on a favorite activity.



Activity: Emoji Graphing



Interactive Notebooks:
Students interpret the pictograph by comparing the data.



DAY FIVE

Minilesson: Students survey the class and vote on a favorite pet.



Activity: Off to the Races



Assessment:
Students complete the pictograph quick check.

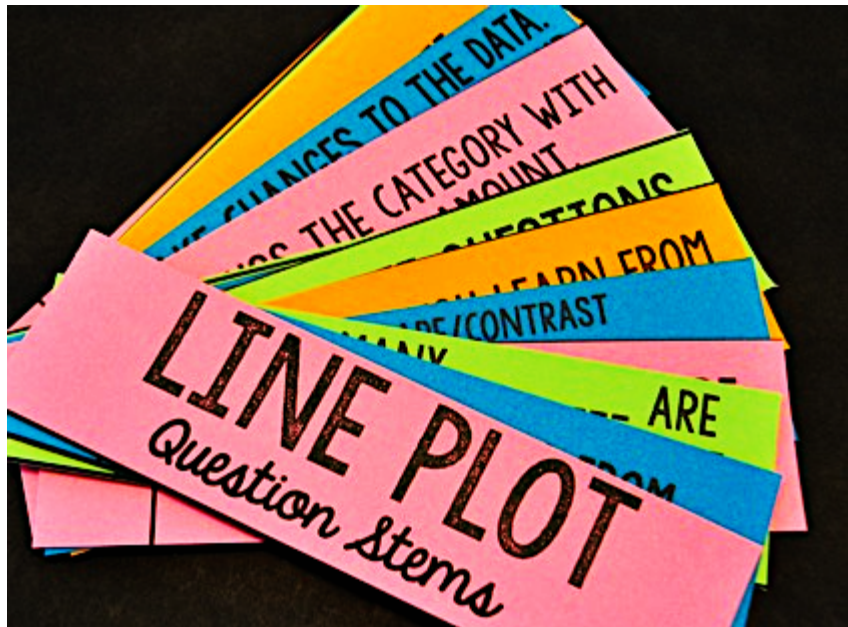
WEEK THREE:

LIN@

plots

DAY 1

Minilesson: Line Plot Question Stems can be used all week long during the minilesson.

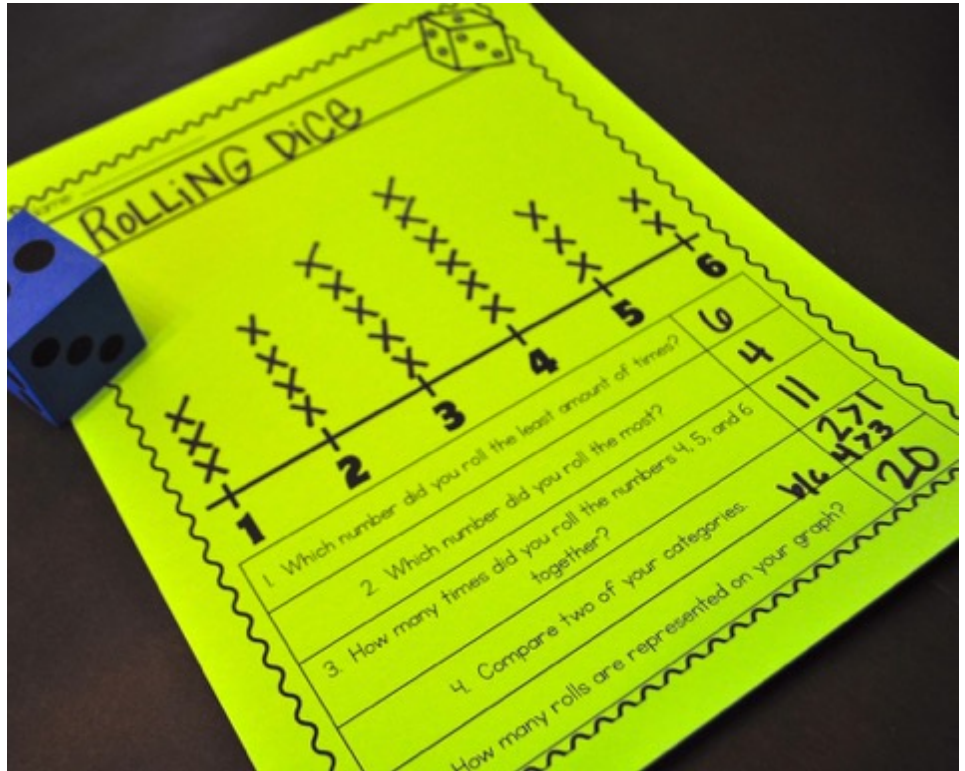


Whole Group Line Plots:

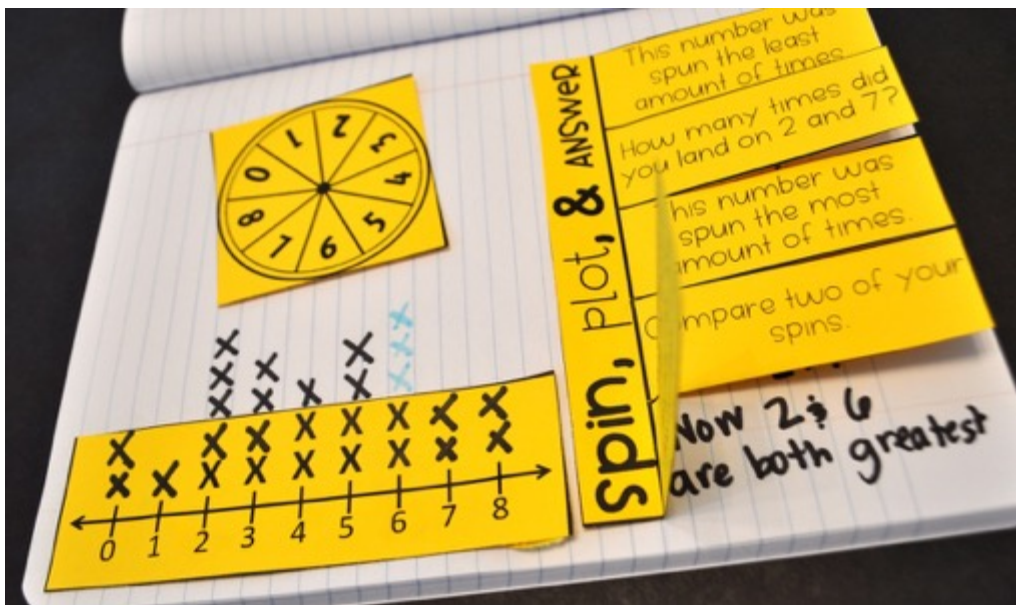


DAY 1

Activity:
Rolling Dice



Interactive Notebooks: Spin, Plot, and Answer

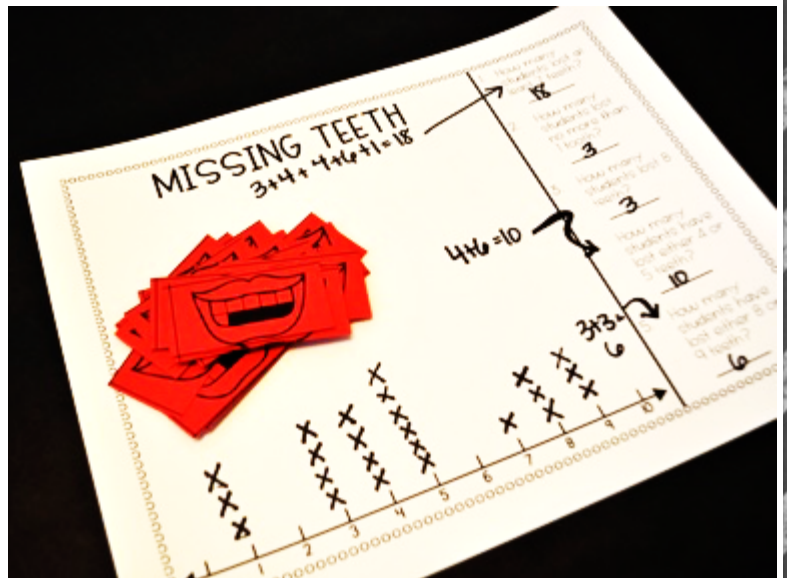


DAY 2

Minilesson:
Syllables in Our
Names, continue
using line plot
question stems



Activity: Missing
Teeth

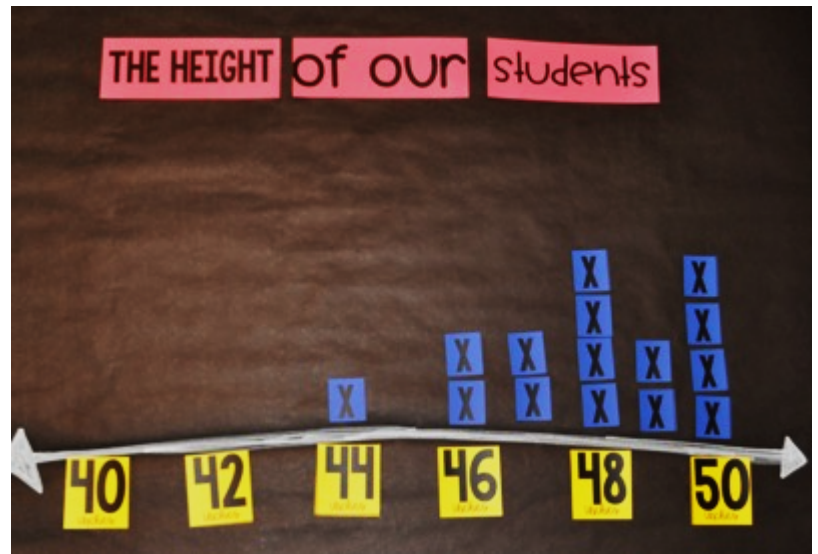


Interactive Notebooks:

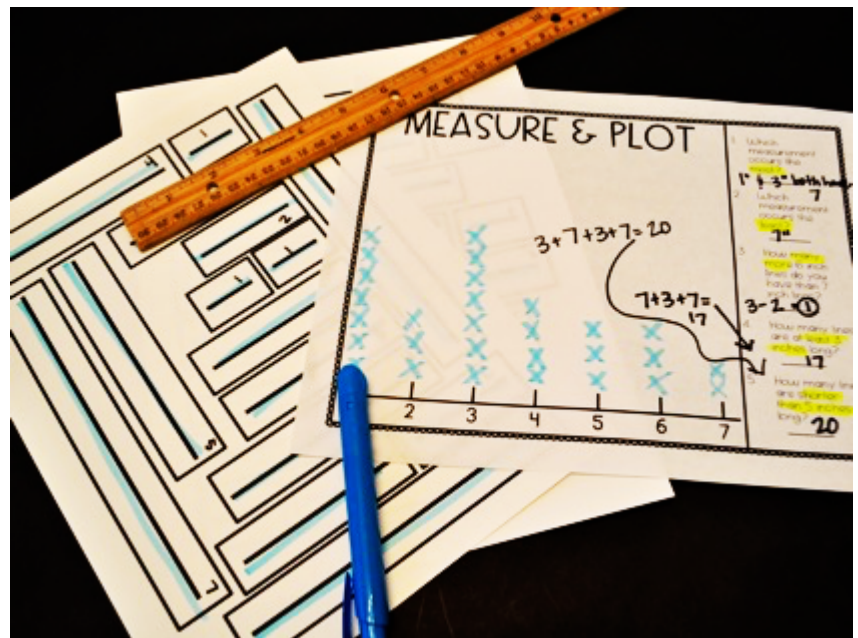


DAY 3

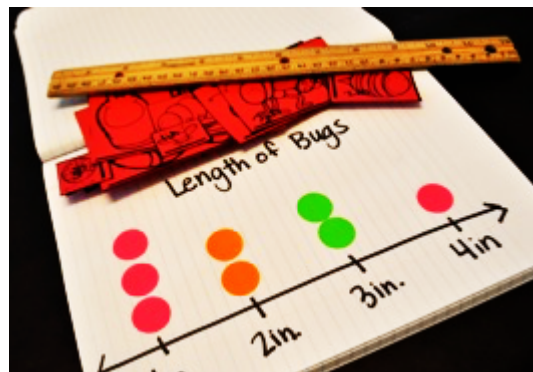
Minilesson: Measure students and plot their heights



Activity: Measure and Plot



Interactive Notebooks:



DAY 4

Minilesson: Measure the length of feet and plot measurements



Activity: Lend a Hand With Line Plots

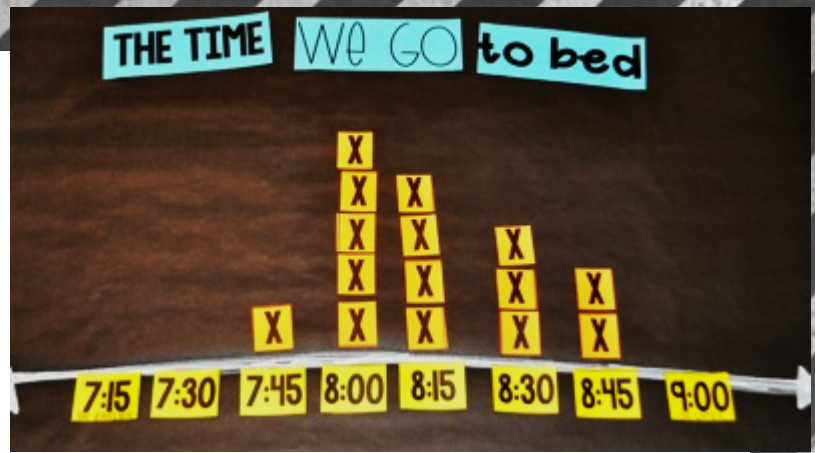


Interactive Notebooks:



DAY 5

Minilessson: The Time We Go To Bed Line Plot

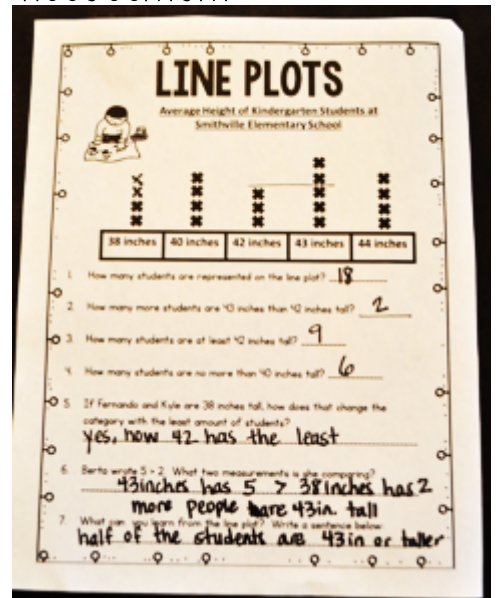


Activity: Snack and Plot



Assessment:

1. Which color has the least amount?
 2. Rita wrote 5 > 1. What could she be comparing?



WEEK FOUR:

Graph

word
problems

DAY 1

Minilesson: Using Data Given to Create a Graph and answer questions



Interactive Notebooks:
Creating Different Graphs



GROUP ACTIVITY

Topic Ideas

Favorite Cereal	Favorite Drink	Favorite Movie	Favorite Book	Favorite Season
Favorite Sport	Favorite Hobby	Favorite Chore	Favorite Food	Favorite Dessert
Favorite Ice Cream	Favorite Cookie	Favorite TV Show	Favorite Animal	Favorite Subject
Favorite Breakfast	Favorite Toy	Favorite Song	Favorite Game	
Favorite Weather	Favorite Future Career	Favorite Vacation	Favorite Superhero	Favorite Character
Favorite Genre	Favorite Series	Favorite Writing Tool	Favorite Recess Activity	Favorite Rainy Day Activity

OUR TOPIC: Favorite Recess Activity

FOUR CATEGORIES: Swings, Soccer, Gaga Ball, Running

Soccer	☺☺☺☺
Gaga Ball	☺☺☺☺☺☺☺☺
Running	☺☺

☺ = 1 student

Joelle's GRAPH project

Favorite Recess Activity

Checked by Teacher:

+10
+10
+10
+10
+10
+10
-10

Running

How many votes?

Students get into their graphing groups and choose a topic with four categories

Topic Ideas

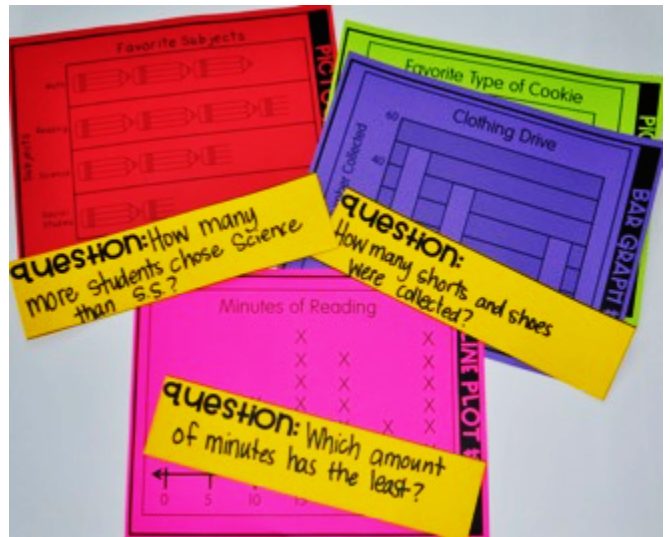
Favorite Cereal	Favorite Drink	Favorite Movie	Favorite Book	Favorite Season
Favorite Sport	Favorite Hobby	Favorite Chore	Favorite Food	Favorite Dessert
Favorite Ice Cream	Favorite Cookie	Favorite TV Show	Favorite Animal	Favorite Subject
Favorite Breakfast	Favorite Toy	Favorite Song	Favorite Game	Favorite Outdoor Activity
Favorite Weather	Favorite Future Career	Favorite Vacation	Favorite Superhero	Favorite Character
Favorite Genre	Favorite Series	Favorite Writing Tool	Favorite Recess Activity	Favorite Rainy Day Activity

OUR TOPIC: Favorite Recess Activity

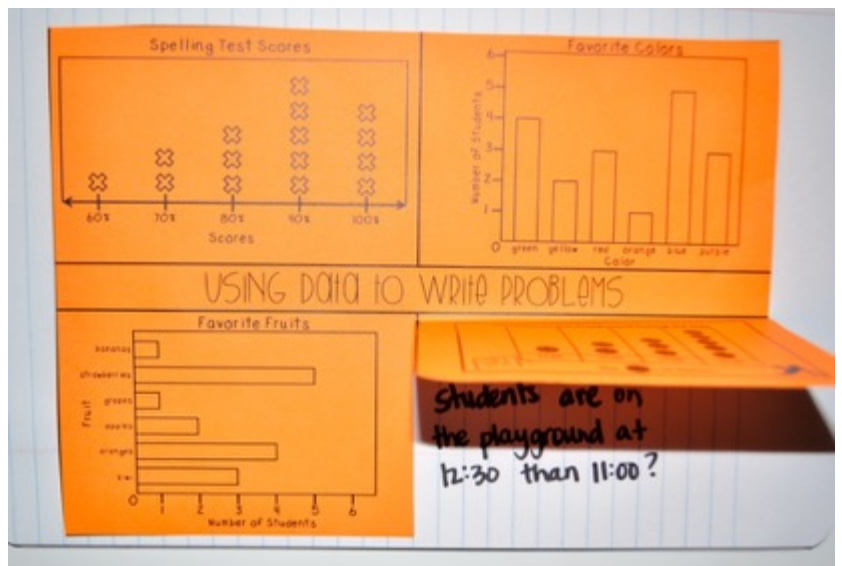
FOUR CATEGORIES: Swings, Soccer, Gaga Ball, Running

DAY 2

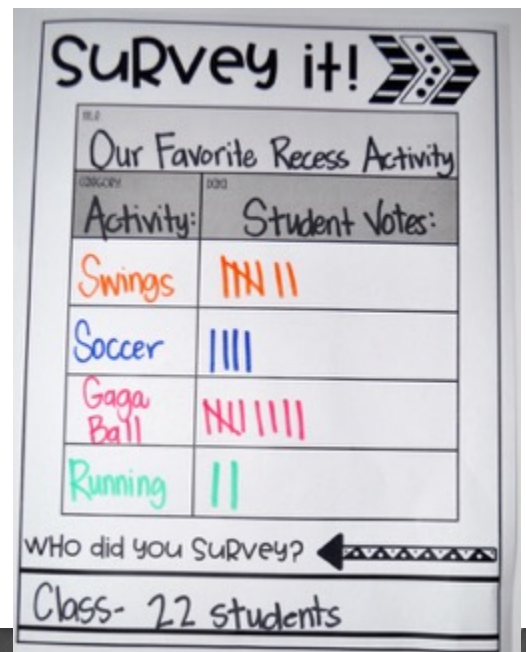
Minilesson: Creating Questions about Data



Interactive Notebooks: Using Data to Write Word Problems



Group Activity: Collecting Data/Survey



DAY 3

Minilesson: Conclusions and Predictions

The minilesson includes three data tables and three sticky notes:

- Average Rainfall**: A table with 'Amount in Inches' on the y-axis (0-10) and 'Hours Practiced' on the x-axis (1-7).
- Weight of Kitten**: A table with 'Pounds' on the y-axis (0-6) and 'Inches' on the x-axis (1-8).
- Jacob's Height**: A table with 'Inches' on the y-axis (10-54) and 'Age' on the x-axis (Age 5, Age 6).

Sticky notes contain the following questions:

- Describe the change that the data shows.
- Can you make any predictions about what will happen next?
- What conclusion can you make after looking at the data?
- What patterns do you notice in the graph?
- Why do you think this changed the way they did?

Interactive Notebooks:
Conclusions and Predictions

The notebook page features a table titled 'Flower Height' with 'Height in Inches' on the y-axis (2-7) and 'Week' on the x-axis (Week 2, Week 3, Week 4). Below the table are two sticky notes:

- The height increases
- How much taller is the flower in Week 4 than in Week 1?
- How tall do you think the flower would be in Week 5?

Group Activity: Creating
Graphs

The group activity consists of three worksheets:

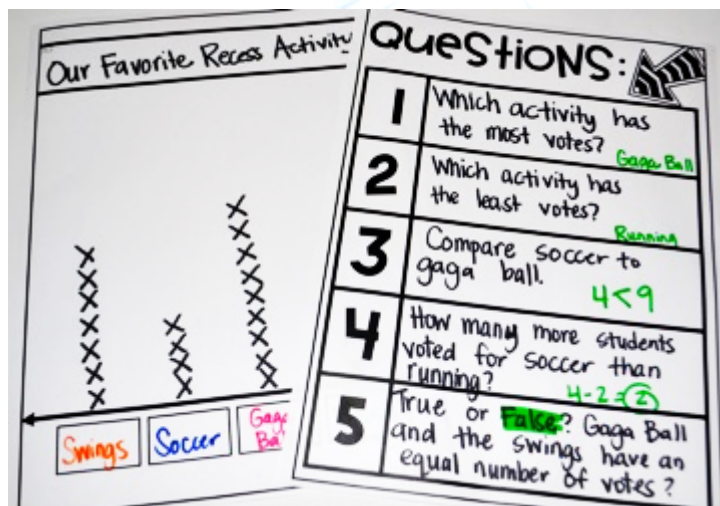
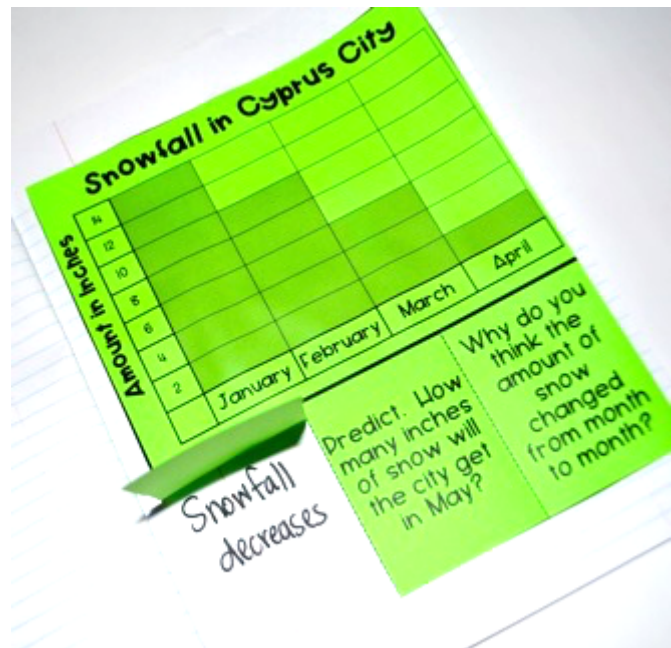
- Favorite Recess Activity**: A bar graph showing the number of students for different activities. The y-axis is 'Number of Students' (0-14) and the x-axis lists 'Swings', 'Soccer', 'Game Ball', and 'Running'. The bars are colored: Swings (red, height 14), Soccer (orange, height 10), Game Ball (blue, height 6), and Running (green, height 2).
- Our Favorite Recess Activity**: A pictograph showing the number of students for different activities. The legend indicates that one smiley face represents 1 student. The activities are: Swings (8 smiley faces), Soccer (4 smiley faces), Game Ball (6 smiley faces), and Running (2 smiley faces).
- Our Favorite Recess Activity**: A dot plot showing the number of students for different activities. The x-axis lists 'Swings', 'Soccer', and 'Game Ball'. The y-axis represents the number of students. The data points are: Swings (8 crosses), Soccer (4 crosses), and Game Ball (6 crosses).

DAY 4

Minilesson: Predictions and Conclusions- Create a graph and discuss

Interactive Notebooks:
Conclusions and Predictions

Group Activity: Create Questions for Data

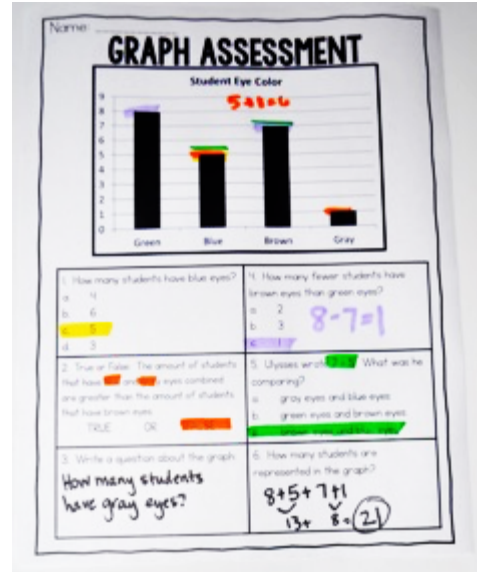
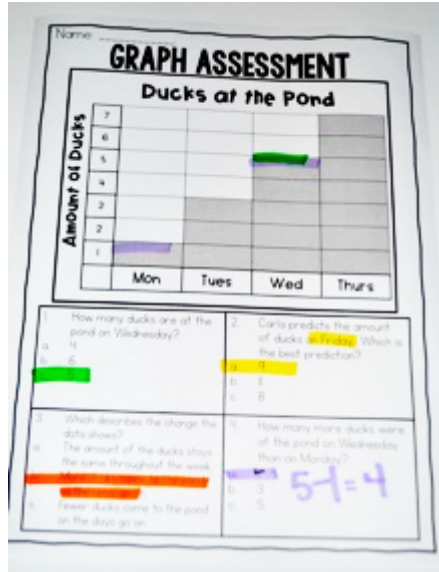


DAY 5

Activity: Grounded in Graphs- students complete a word problem scoot



Assessment:



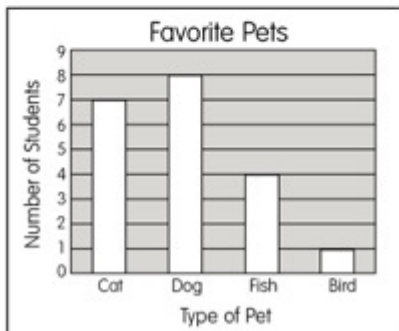
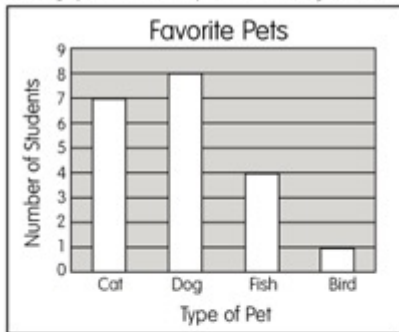
Group Activity: Share and Reflect



DAILY WORD PROBLEMS

For this unit students will glue a graph into their notebook at the beginning of the week. Each day students analyze the graph and answer questions.

Use this bar graph for the word problem each day. Glue into spiral.



WORD PROBLEM- DAY ONE

Answer the questions.

- How many students chose a dog?
- Which pet has the most votes?

Answer the questions.

- How many more students chose a dog than a bird?
- Which pet has the fewest votes?

WORD PROBLEM- DAY TWO

Answer the questions.

- How many students chose a fish?
- How many more students chose a dog than a fish?
- How many students chose a cat?

Answer the questions.

- How many students chose a dog?
- How many more students chose a dog than a bird?
- How many students chose a fish?

Answer the questions.

- How many students chose a dog?
- How many more students chose a dog than a bird?
- How many students chose a fish?

Answer the questions.

- How many students chose a dog?
- How many more students chose a dog than a bird?
- How many students chose a fish?

Answer the questions.

- How many students chose a dog?
- How many more students chose a dog than a bird?
- How many students chose a fish?

Answer the questions.

- How many students chose a dog?
- How many more students chose a dog than a bird?
- How many students chose a fish?

WORD PROBLEM- DAY THREE

How many students chose a pet that is a mammal as their favorite? Explain your thinking.

How many students chose a pet that is a bird as their favorite? Explain your thinking.

WORD PROBLEM- DAY FOUR

Rick chose a pet that has the same amount of votes as the cat and bird together. Which pet did he choose?

WORD PROBLEM- DAY FIVE

Pamela used the data in the bar graph to write $8 > 1$. What votes did Pamela compare? Explain your thinking.

Pamela used the data in the bar graph to write $8 > 1$. What votes did Pamela compare? Explain your thinking.

Pamela used the data in the bar graph to write $8 > 1$. What votes did Pamela compare? Explain your thinking.

Pamela used the data in the bar graph to write $8 > 1$. What votes did Pamela compare? Explain your thinking.

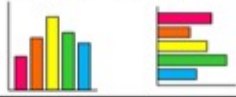
Pamela used the data in the bar graph to write $8 > 1$. What votes did Pamela compare? Explain your thinking.

Pamela used the data in the bar graph to write $8 > 1$. What votes did Pamela compare? Explain your thinking.

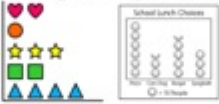
VOCABULARY CARDS

Cards that you can display on a math word wall or bulletin board

BAR GRAPH



PICTOGRAPH



LINE PLOT



TALLY CHART

SURVEY

Which type of milk is your favorite?

TITLE

LABELS



NUMBERS OR SCALE

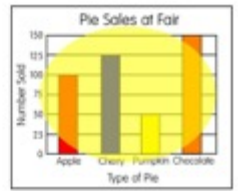
EQUAL TO



GREATEST TO LEAST



DATA



GREATER THAN



LESS THAN



LEAST TO GREATEST





I CAN STATEMENTS


I Can Statements can be displayed throughout the unit.

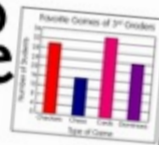
I CAN:

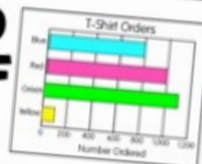
READ AND CREATE BAR GRAPHS 


READ AND CREATE PICTOGRAPHS 

COLLECT AND ANALYZE DATA 

READ AND CREATE LINE PLOTS 

USE CHARTS AND GRAPHS TO SOLVE PROBLEMS 

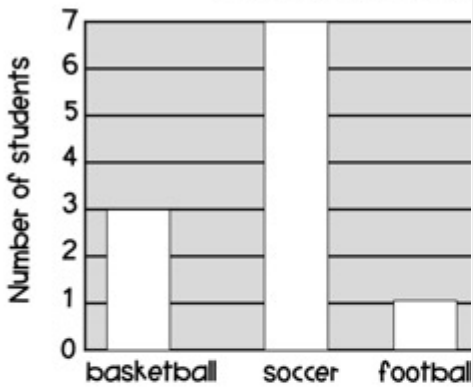
UNDERSTAND THE PARTS OF A GRAPH 

MAKE PREDICTIONS AND DRAW CONCLUSIONS 

QUICK ASSESSMENTS

BAR GRAPH

Our Class' Favorite Sports

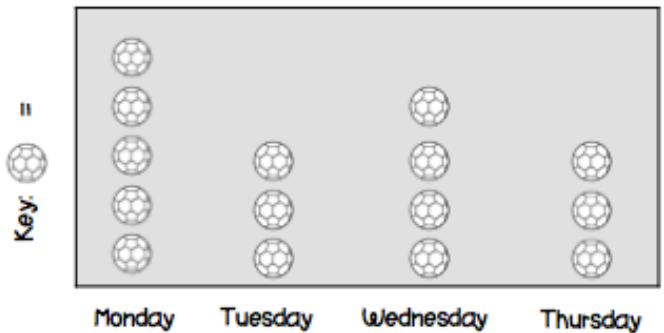


Finish the graph: 5 students voted for basketball.

- How many students voted in all? _____
- How many more students voted for soccer than for football? _____
- How many fewer students voted for football than for soccer? _____
- How many students voted for basketball or soccer? _____
- Which sport had the least amount of votes? _____
- Tre wrote the number sentence $7 > 3$. What does this mean? _____
- Which sport had the greatest amount of votes? _____

PICTOGRAPHS

Soccer Goals Made



- How many goals were scored in all? _____
- True or False: The player scored two more goals on Wednesday than he did on Thursday. _____ Explain: _____
- How many fewer goals were scored on Tuesday than on Monday? _____
- How many goals were scored on Monday-Wednesday? _____
- On which two days did the player score the same amount of goals? _____
- Write two statements about the graph:
 - _____
 - _____