GRADE 6

Chapter 6

WHAT WE ARE LEARNING

Graph Data

VOCABULARY

Here are some of the vocabulary words we use in class:

Multiple-bar graph A bar graph that shows two or more sets of data on the same graph

Multiple-line graph A line graph that shows two or more sets of data on the same graph

Stem-and-leaf plot A way to organize data when you want to see each item in the data

Histogram A bar graph that shows the frequency, or number of times, data occur within intervals

Box-and-whisker graph A graph that shows how far apart and how evenly data are distributed

Date

Dear Family,

Your child is analyzing graphs and making stem-and-leaf plots and box-and-whisker graphs.

To make a stem-and-leaf plot of the data, follow the steps below.

Population Density of Selected South American Countries per Square Mile

30, 25, 17, 46, 45, 72, 68, 9, 77, 61, 27, 44, 56

Step 1

First, group data by the tens digits. Then, order data from least to greatest.

09
17
25, 27
30
44, 45, 46
56
61, 68
72, 77

Step 2

Use the digits in the tens place as the stems. Use the digits in the ones place as the leaves. Write leaves in increasing order.

Stem	Leaves
0	9
1	7
2	5 7
3	0
4	4 5 6
5	6
6	1 8
7	2 7

Ask questions such as these as you work together.

What reason might a person have for organizing data in a stem-and-leaf plot? Your child might reply: A stem-and-leaf plot shows each item of the data.

How would you organize data that has items in the hundreds? Your child might reason: I could make the stems using the digits in the hundreds and tens places and the leaves using the digits from the ones place.

Lower extreme The least value in the data

Upper extreme The greatest value in the data

Lower quartile The median of the lower half of the data

Upper quartile The median of the upper half of the data

If we added 79 and 58 to the data about countries, how would it change the plot? Your child might respond: The leaves for the 7 stem would be 2, 7, 9 and the 5 stem would have leaves of 6, 8.

This is how your child is learning to make and understand box-and-whisker graphs.

Value of Coins in Pockets
32 21 26 30 20 29 35 24
20 21 24 26 30 32

Step 1

Order the data.

20, 20, 21, 21, 24, 24, 26, 26, 29, 30, 30, 32, 32, 35

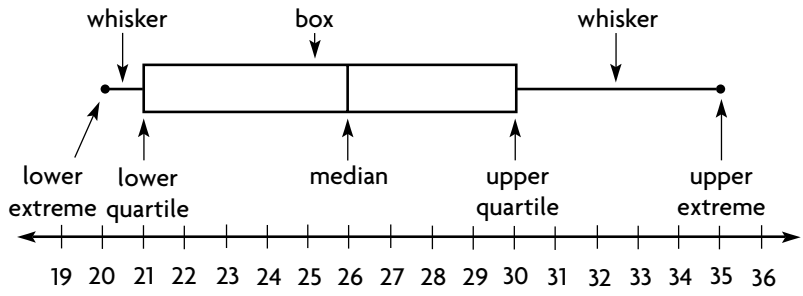
Step 2

Determine the following values:

- the median.
- the lower extreme, or the least value, and the upper extreme, or the greatest value.
- the lower quartile, or median of the lower half of the data, and the upper quartile, or the median of the upper half of the data.

Step 3

Create a box-and-whisker graph from the values.



What measures of central tendency can you not find on a box-and-whisker graph? Your child might respond: A box-and-whisker graph does not show the mean or the mode.

As you work with your child, talk about math to help build confidence and understanding.

Sincerely,

Name _____

PRACTICE/HOMEWORK

Graph Data

Grid paper available on pages FA25–FA26

Use the data in the table.

1. Make a double-bar graph.
2. Make a double-line graph.

Number of Sodas Consumed

	Friday	Saturday	Sunday
Boys	29	51	47
Girls	21	56	40

Use the data in the table.

3. Make a line graph.
4. If the trend continues, how many miles will be run on the sixth day?

_____

Distance Run

Day	1	2	3	4	5
Miles	2	3.5	5	6.5	8

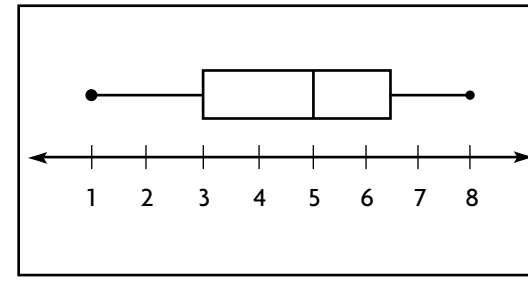
Make a stem-and-leaf plot of the data.

38 46 35 34 32 42 25 28 38 22 29 36

5. Find the mode of the data. _____
6. Find the median of the data. _____

Use the box-and-whisker graph. The data show points scored by a baseball team during a tournament.

7. What was the greatest number of runs scored? _____
8. What was the fewest number of runs scored? _____
9. What is the median? _____
10. What are the lower and upper quartiles? _____



Use the bar graph.

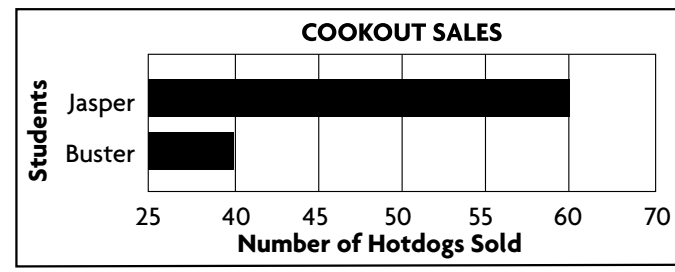
11. Why is this graph misleading? _____
12. How could you change it so that it is not misleading?

_____

_____

_____

_____



Answers: For **1-3**, check students' graphs. **4.** 9.5 miles; **5.** 38; **6.** 34.5; **7.** 8; **8.** 1; **9.** 5; **10.** 3 and 6.5; **11.** It appears that Jasper sold more than four times as many hotdogs as Buster; **12.** Start the scale at zero and have equal intervals.

MATH GAME

Family Fun WHOYAAH!

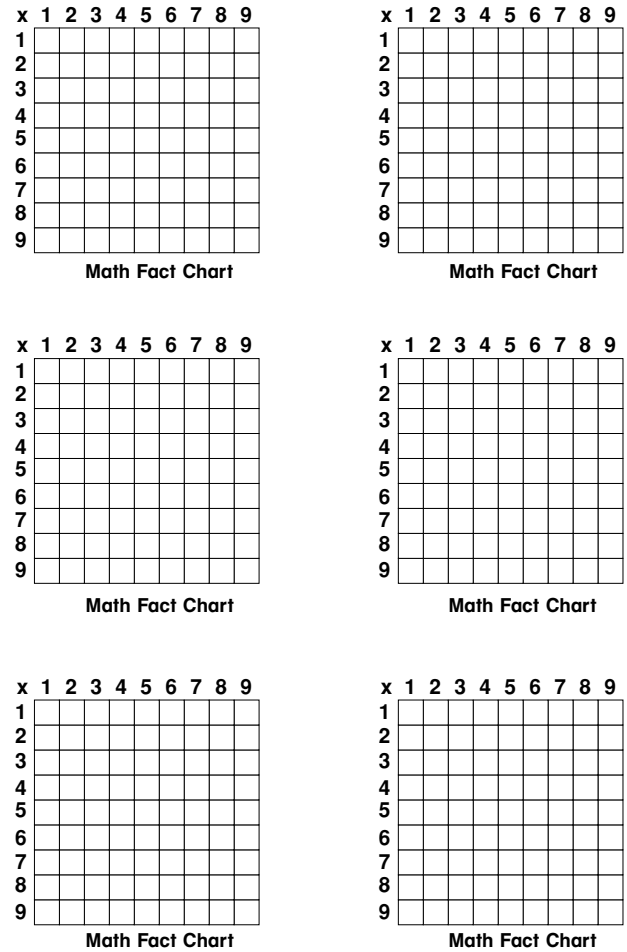
Materials

- 2 number cubes
- a set of bonus cards with the following facts:
  7×1 through 7×9; 8×1 through 8×9; 9×1 through 9×9
- grid from page FA25 or FA26

Objective: Complete a row or column in a math fact chart before your opponent. Players keep a tally of the number of cube tosses in each game.

Directions

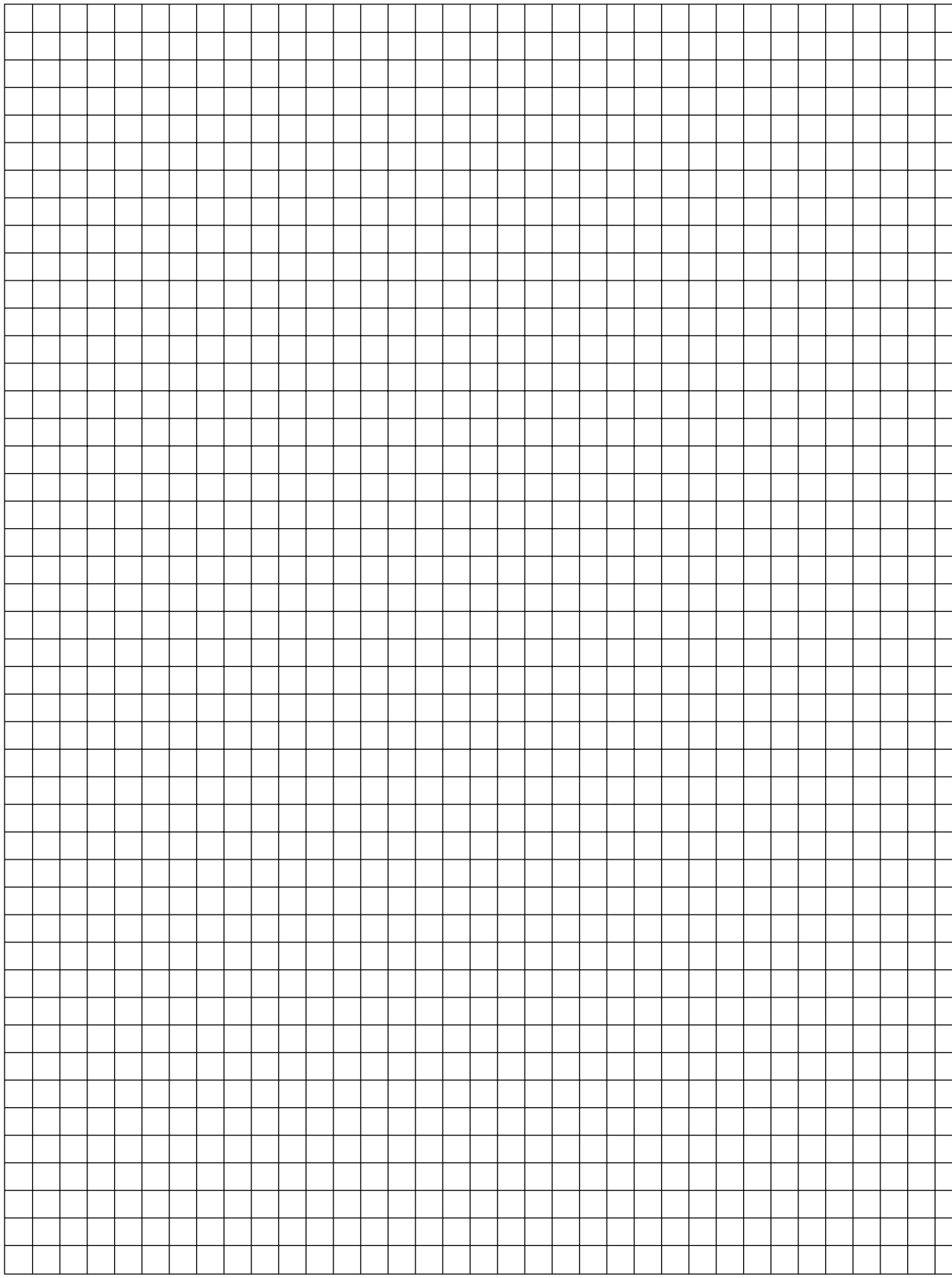
1. Each player uses a new math fact chart for each game.
2. Each player tosses the number cubes and keeps a tally of the number of tosses in the table below.
3. The two numbers shown on the cubes are factors. The player writes the product in the correct square on the math fact chart. Except for doubles facts, each product may be recorded in one of two places on the chart. (If 3 and 5 are tossed, the square at the intersection of 3 across and 5 down or the square at the intersection of 5 across and 3 down could be used.)
4. If a player rolls a double and knows the product, he or she shades in the square and draws a bonus card, gives the correct product, and records that on the chart as well. The winner is the first player to complete a row or column.



After five games the players make a graph showing the number of throws per game.

Player	Game 1	Game 2	Game 3	Game 4	Game 5

Grid paper for pages FA23 and FA24



Grid paper for pages FA23 and FA24