

Name _____

Choose an Appropriate Graph


Essential Question How can you choose an appropriate graph to display data?

UNLOCK the Problem REAL WORLD

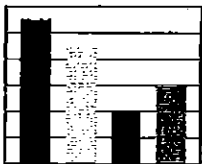
CONNECT You have learned about different types of graphs. To choose an appropriate graph for a set of data, examine the type of data you want to display.

Karen surveyed 237 students about their favorite family events. She recorded the results in the table. Which type of graph would be appropriate to display the data?

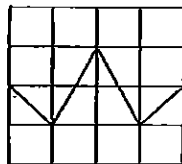
Favorite Family Event	
Family Event	Number of Votes
Family Reunion	61
Wedding	74
Cook Out	14
Thanksgiving Dinner	69
Ski Trip	19

 Choose an appropriate type of graph to display Karen's data.

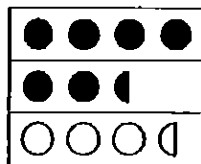
Use what you know about bar graphs, line graphs, and pictographs to help you decide.



Bar Graph



Line Graph



Pictograph

- Does Karen's data show a change over time? _____

Since the data does not show a change over time, Karen should not use a _____ to display the data.

- Are the data values multiples of a number? _____

Since the data values are not multiples of a number, Karen could not easily find a value for the symbol in the key of a _____ to display the data.

So, a _____ is an appropriate type of graph for the data.

- Which type of graph shows change over time?

- Which type of graph uses pictures or symbols to display data?

- Which type of graph allows data to be easily compared?

Try This! Choose an appropriate type of graph to display the data in the table.

Does the data show a change over time? _____

Are the data values multiples of a number? _____

A _____ is an appropriate graph to display the data in the table.

What other type of graph could you use to display the data in the table? _____

Favorite Vegetable	
Vegetable	Number of Votes
Carrot	20
Beet	5
Zucchini	15
Squash	15

Math Talk Explain why a line graph would be appropriate to display the cost of gasoline over the last 30 years.

Share and Show



Choose an appropriate type of graph to display the data.
Write *bar graph*, *line graph*, or *pictograph*.

- Eli makes this table showing the ages of his family members.
- The speed of one racecar is recorded at six checkpoints during a race.

Family Member	Age
Dad	35
Mom	34
Eli	12
Tonya	10
Jim	7
Lisa	4

Checkpoint	Speed (in mph)
1	50
2	62
3	66
4	47
5	65
6	70

- Tomas includes a graph displaying the wingspans of endangered birds for a science report.

- Beth's school is collecting rolls of pennies to raise money for a field trip. Each roll contains 50 pennies. Beth keeps track of the number of pennies donated by each class.

Math Talk Describe an example of data that could be shown in a pictograph.

On Your Own

Choose an appropriate type of graph to display the data. Write *bar graph*, *line graph*, or *pictograph*.

5. For Arbor Day, groups purchase and plant bundles of seedlings. Lila records the number of seedlings each group plants.


Group	Number of Seedlings
Girl Scouts	20
Boy Scouts	15
Teachers	10
Track Team	25


6. For science class, Hal records the daily low temperature, in degrees Fahrenheit, on the porch of his house for 4 days in this week.

Day	Temperature (in °F)
Monday	20
Tuesday	32
Wednesday	30
Thursday	28

7. Mrs. Green records the height, in inches, of her daughter at ages 1, 2, 3, 4, and 5 years. _____

8. Clara records the height of the eight tallest buildings in the world. She includes the Willis Tower, which is 442 meters tall.

9.  Think about the numbers that would be in the set of data for Problem 8. Explain why a pictograph may not be an appropriate type of graph to display this data.

10.  **Write Math** Sarah displayed the number of nickels, dimes, and quarters she has on a pictograph. Could the data also have been shown on a line graph or a bar graph? Explain.



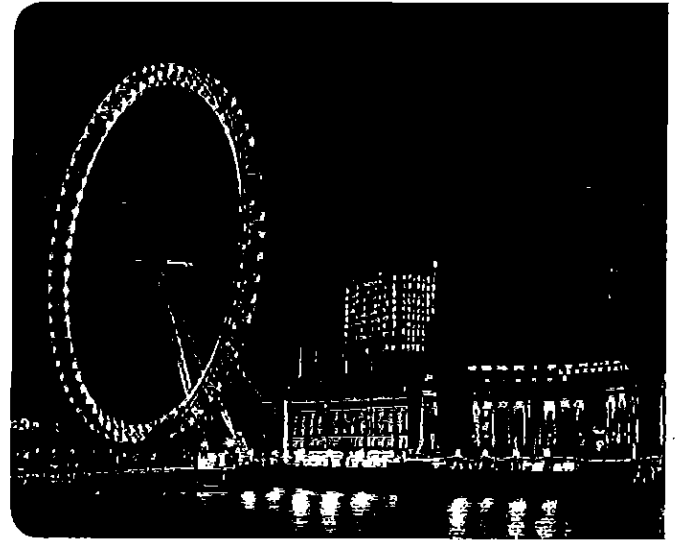
Problem Solving



Pose a Problem

11. The BA London Eye is a Ferris wheel in England that is 135 meters tall. The Cosmo Clock 21 Ferris wheel in Japan is about 113 meters tall. The Niagara SkyWheel in Canada is 53 meters tall. The Texas Star in Dallas is 65 meters tall.

Write a problem about graphing that can be solved by using the data in the paragraph above.



Pose a problem.

Solve your problem.

- Describe how you could change the problem by rounding the height of each Ferris wheel. Then solve the problem.

12. ★ Test Prep Use the data in Problem 11. How much taller is the BA London Eye than the Texas Star?

- (A) 200 meters (C) 70 meters
(B) 82 meters (D) 60 meters

Name _____

Choose an Appropriate Graph

Choose an appropriate type of graph to display the data. Write *bar graph*, *line graph*, or *pictograph*.

- Kyle surveys students to find which pizza topping they prefer.
- Ms. Torres keeps track of the total number of kindergartners that start in the school district each year.

Pizza Topping	Number of Votes
Cheese	24
Pepperoni	16
Sausage	12
Mushroom	4
Other	8

Year	Number of Kindergartners
2005	72
2006	77
2007	80
2008	85
2009	92

pictograph or bar graph

- The zoo veterinarian keeps track of the weight of a baby panda bear each week during its first year.
- Liz surveys four classrooms to find out how many raffle tickets each sold. Raffle tickets are sold in packs of ten.

Problem Solving

- Write and solve a problem about graphing using the roller coaster data in the table at the right.

Roller Coaster Drops	
Roller Coaster	Drop (in feet)
Voyage	154
El Toro	176
Boss	150

Lesson Check

- Which set of data is most appropriately displayed in a bar graph?
 - (A) a survey of your classmates' favorite bagel flavor
 - (B) miles driven over ten hours
 - (C) the amount of rainfall each hour during a rainstorm
 - (D) the amount of cash in a register each hour a store is open
- Which set of data is most appropriately displayed using a line graph?
 - (A) the lengths of the five longest rivers in the United States
 - (B) the weight of Mary's baby lamb each month for a year
 - (C) a survey of your classmates' favorite fruit
 - (D) the number of passengers in one year at the five busiest airports

Spiral Review

- Which of the following is a good survey question or observation? (Lesson 7.1)
 - (A) Observe students in your class and record how many like video games.
 - (B) What is your favorite subject? (Math, Science)
 - (C) Record the number of miles you run each day for one week.
 - (D) Do you like soothing rock music or loud rap music? (Soothing Rock, Loud Rap)
- In all, Garrett and Zeke found 36 pieces of sea glass at the beach. They want to share the sea glass equally. What do Garrett and Zeke need to find to solve the problem? (Lesson 6.1)
 - (A) the total number of pieces
 - (B) the number of equal groups
 - (C) the number in each group
 - (D) the number left over

- Which expression does the model show?

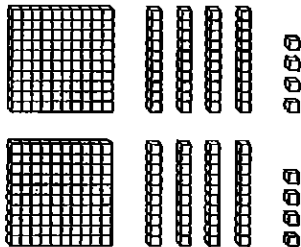
(Lesson 4.8)

(A) 144×144

(B) 2×144

(C) 2×244

(D) $244 + 244$



- Kit looked down the column for 8 in a multiplication table and found the product 56. In which row would the product 56 be found? (Lesson 2.4)

(A) row 5

(C) row 7

(B) row 6

(D) row 8