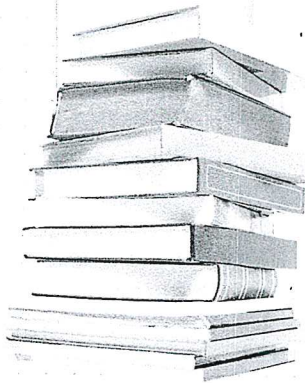


## Solve & Discuss It!



ACTIVITY

Ms. Jackson wrote a question on the board. Then she collected student responses to the question and recorded them in a tally chart. What question could she have asked? Is there more than one possible response to the question? Explain.



Books	
0	
1	
2	I
3	
4	
5	I



### Make Sense and Persevere

What other questions could you ask that would result in a variety of numerical answers?

## Lesson 8-1

### Recognize Statistical Questions



Go Online | [PearsonRealize.com](https://www.pearsonrealize.com)

#### I can...

identify and write statistical questions.



MAFS.6.SP.1.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. ... Also 6.SP.2.4

MAFS.K12.MP.1.1, MP.2.1, MP.4.1, MP.8.1

### Focus on math practices

**Reasoning** Suppose Ms. Jackson wants to know the amount of time her students spent outdoors the previous afternoon. What question might she ask each student to gather the data?

**Essential Question** How are statistical questions different from other questions?



**EXAMPLE 1** Recognize a Statistical Question



Mr. Borden asked his students a question and recorded the data in a table. What question did Mr. Borden ask?

- What is the area of an  $8\frac{1}{2}$ "  $\times$  11" sheet of notebook paper?
- How many sheets of paper did you use last week?
- Did Bill use notebook paper to write his book report?

Number of Sheets	Number of Students
5	I
10	I
15	II
20	III
25	IIII
30	IIII

**Make Sense and Persevere** How does thinking about possible answers to the questions help you determine which questions are statistical?

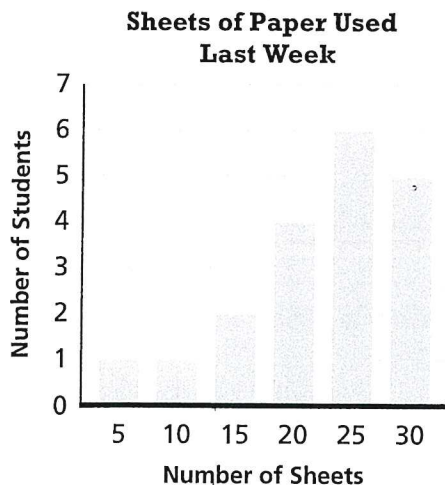
A **statistical question** always has variability in the responses. This is, it has a range of responses.

The question *How many sheets of paper did you use last week?* can have a range of answers so it is a statistical question.

The questions *What is the area of an  $8\frac{1}{2}$ "  $\times$  11" sheet of notebook paper?* and *Did Bill use notebook paper to write his book report?* have only one answer, so they are not statistical questions.

Mr. Borden asked, *How many sheets of paper did you use last week?*

You can display the answers to Mr. Borden's question in a bar graph.



The bar graph shows that there is a range of possible answers to Mr. Borden's question.

Mr. Borden's question is a statistical question.

**Try It!**

Is the question *What was the high temperature on March 8 of last year?* a statistical question? Explain.

**Convince Me!** How could you change the question above to make it a statistical question?

## EXAMPLE 2



### Use Data to Identify a Statistical Question with Multiple Answers



ACTIVITY



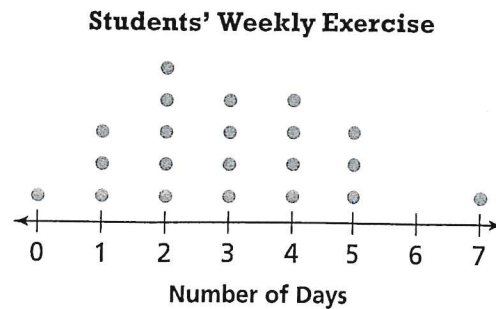
ASSESS

Lucia surveyed the students in her class and made a dot plot of the results. What question could Lucia have asked?

Look at the title and labels on the dot plot.

**Model with Math** A dot plot can be used to display the answers to a statistical question.

The dot plot shows the number of days different students exercise each week. The statistical question Lucia could have asked is *How many days do you exercise each week?*



### Try It!

What is another statistical question Lucia might ask about the exercise the students in her class do each week?

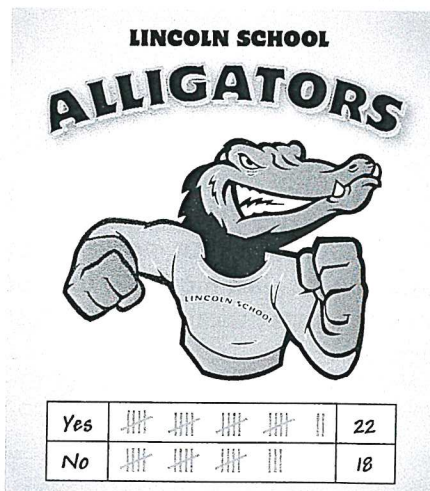
## EXAMPLE 3



### Use Data to Identify a Statistical Question with Two Answers

Dante surveyed students to see how they feel about a proposal to choose a new school mascot. The frequency table shows the results. What question did Dante likely ask? Is this a statistical question?

Dante likely asked a question such as *Do you want a new mascot?* There are only two answers, Yes or No. Because there is more than one possible answer, this is a statistical question.



### Try It!

How could Dante change his statistical question so that there would be more than two possible answers?





To recognize and write statistical questions, determine whether the question has only one answer or several different answers. Statistical questions have a variety of different answers.

How many nickels are in a dollar?

Not statistical

Which former U.S. president appears on a nickel?

Not statistical

How many nickels do students carry in their backpacks?

Statistical

## Do You Understand?

- Essential Question** How are statistical questions different from other questions?
- Generalize** How does examining the answers to a question help you determine if the question is a statistical question?
- Write a question about movies that your classmates saw last month. Is the question you wrote a statistical question? Justify your response.
- Choose which is a statistical question: *What are the ages of the students in this class?* or *How many pennies equal 1 dollar?* Explain.

## Do You Know How?

- Determine which of the questions below are statistical questions.
  - In which months are the birthdays of everyone in your class?
  - Does Sue wear glasses?
  - Who is the current president of the United States?
  - How tall are the students in Grade 6?
  - What is the least populated state?
  - How many fish are in the pond?
- Mr. Borden asked his students, *How far from school do you live?* Is his question a statistical question? Explain.
- Mr. Borden also asked his students, *How do you get to school each day?* Is this question statistical? Explain.



Name: \_\_\_\_\_



PRACTICE



TUTORIAL

## Practice & Problem Solving



Scan for  
Multimedia



In 8 and 9, write a statistical question that you could ask to gather data on each topic.

8. Number of pets classmates own

9. Heights of different household plants



10. Kim asked her classmates, *How many siblings do you have?* She collected the following responses: 0, 1, 2, 1, 2, 0, 3, 1, 0, 5, 5, 1, 3, 1, 0, 2, 4, 1, 3, 0. Make a dot plot to display the data.

11. Sergei asked his classmates, *Will you take Spanish or French next year?* He collected these responses: 15 classmates chose Spanish and 13 chose French. Make a frequency table to display the data.

12. Is the following a statistical question? Explain.  
*How many plays do students see in a year?*

13. Is the following a statistical question? Explain.  
*How do shoppers in a town pay for groceries?*

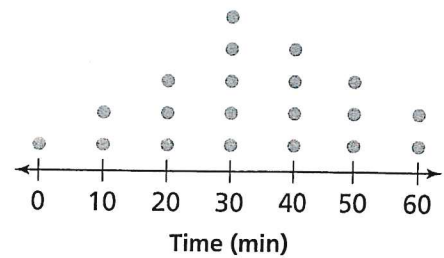


In 14 and 15, use the dot plot at the right.

14. **Make Sense and Persevere** What statistical question could have been asked to collect the data shown in the dot plot?

15. **Higher Order Thinking** If the data in the dot plot show how many minutes students spent on homework the previous night, how many hours in all did these students spend doing homework? Did a typical student from this group spend more or fewer than 20 minutes on homework?

**Time Spent on Homework**



16. **Vocabulary** Wyatt says that a *statistical question* must have a numerical answer. Do you agree with Wyatt? Explain.

17. **Reasoning** Ms. Miller asks parents, *Do you support switching to a new lunch vendor for our school program?* How many different responses could she get? Is this a statistical question?

## Assessment Practice

18. Ms. Williams asked each student in her class these two questions:

- *How many digits are in a phone number, including the area code?*
- *In a typical week, on how many days do you spend some time watching television?*

Which of the questions that Ms. Williams asked is a statistical question? Explain. 6.SP.1.1

19. Select all of the statistical questions. 6.SP.1.1

- What is your favorite color?
- Does Carmen wear braces?
- How many books did you read last week?
- Which U.S. state has the largest land area?
- Should the basketball team purchase new uniforms?

