

# Lesson 9-8

## Statistical Questions

<p><b>Lesson Objective</b></p> <p>To identify a statistical question and to recognize and remove bias from statistical questions</p>	<p><b>Common Core Standards</b></p> <p>Statistics and Probability: 6.SP.1, 6.SP.2</p>
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### Vocabulary

A statistical question is **a question for which you expect to get a variety of different answers. You can analyze the distribution and tendency of those answers using statistical measures.**

### Example

**1 Identifying Statistical Questions** Tell whether the question is a statistical question. If it is, identify possible answers. If not, explain why not.

**a.** What is the temperature at which water freezes in degrees Fahrenheit?

This **is not** a statistical question because **there is just one** answer:

**32°F** A statistical question might ask a group of people: At what outdoor temperature do you feel it is necessary to put on a jacket?

**b.** What is the favorite sport for the sixth graders in your school to watch?

This **is** a statistical question because **it can have many different answers** depending on whom you ask. Possible favorites: **baseball, soccer, basketball, hockey**.

**c.** How many pairs of shoes do I own?

This **is not** a statistical question. There is **only one** factual answer.

A statistical question might ask 20 different people in a shoe store:  
How many pairs of shoes do you own?

### Quick Check

1. Tell whether the question is a statistical question. If it is, identify possible answers. If not, explain why not.
  - a. How many students are taller than 6 feet?

**No; there is only one possible answer.**

- b. What size shoe do you wear?

**Yes; possible answers include whole or mixed numbers involving one half. Answers may also vary because a person can wear different sizes for different types of shoe.**

### Example

- 2 **Identifying Bias** Stephanie and John wanted to find out about favorite seasons. Which question is likely to give biased results? Why?
  - Stephanie’s question: Which is your favorite season: freezing winter, summer, mild spring, or fall?
  - John’s question: Which is you favorite season: winter, spring, summer, or fall?

**Stephie’s** question is biased. The words in the question could influence the answers.

The word **freezing, for winter**, could make people avoid that answer.

The word **mild, for spring**, could make people choose that answer.

### Quick Check

2. Determine if the survey question is biased and explain your answer. If it is biased, rewrite the question so it is unbiased.
  - a. Rolondo wrote the survey question: Do you prefer delicious sweet red grapes or bitter strawberries?

**Biased; The words “delicious,” “sweet,” and “bitter” make the question biased. Rewrite as: Do you prefer grapes or strawberries?**

- b. Eliana wants to find out which internet service people in her area people think is best. She asks: Which is the fastest internet service in your area?

**Biased: The question forces people to use fast service as the criterion. People may also consider price, reputation, and other factors. Rewrite as: Which internet service in your area do you prefer?**