

Active Reading

Section 2: Statistics and Models

Read the passage below and answer the questions that follow.

Although statistical populations are composed of similar individuals, these individuals often have different characteristics. For example, in the population of students in your classroom, each student has a different height, weight, and so on.

As part of their experiments, the Keene High School students measured the lengths of dwarf wedge mussels in a population. By adding the lengths of the mussels and then dividing by the number of mussels, students calculated the average length of the mussels, which in statistical terms is called the *mean*. A mean is the number obtained by adding up the data for a given characteristic and dividing this sum by the number of individuals. For scientists, the mean provides a single numerical measure for a given aspect of a population. Scientists can easily compare different populations by comparing their means.

IDENTIFYING MAIN IDEAS

One reading skill is the ability to identify the main idea of a passage. The main idea is the main focus or key idea. Frequently, a main idea is accompanied by supporting information that offers detailed facts about the main idea.

Read each question and write the answer in the space provided.

1. Can one individual represent an entire population? Why or why not?

2. How can scientists compare two different populations?

3. How is a mean established?

In the space provided, write the letter of the term or phrase that best answers each question.

- _____ 4. The mean provides a single numerical measure for one of a population.
- | | |
|---------------|-----------------------|
| a. individual | c. dwarf wedge mussel |
| b. average | d. characteristic |

Active Reading *continued*

- _____ 5. For which characteristic did Keene High School students establish a mean?
- a. height
 - b. weight
 - c. length
 - d. taste
- _____ 6. What did Keene High School students do with this characteristic to determine the mean?
- a. added the data for the characteristic and divided the sum by the number of mussels
 - b. added the data for the characteristic and multiplied by the number of mussels
 - c. added the data for the characteristic and subtracted it from the number of mussels
 - d. added the data for the characteristic with the number of mussels

SEQUENCING INFORMATION

One reading skill is the ability to sequence information, or to logically place items or events in the order in which they occur.

Sequence the statements below to show the steps in the process used in determining the average. Write “1” on the line in front of the first step, “2” on the line in front of the second step, and so on.

- _____ 7. Divide the sums of the data by the number of individuals in each population.
- _____ 8. Compare the means of the two populations.
- _____ 9. Measure and record the characteristic data of all individuals.
- _____ 10. Identify a characteristic common to different populations.
- _____ 11. Add up the characteristic data from each population.

RECOGNIZING CAUSE AND EFFECT

One reading skill is the ability to recognize cause and effect.

Read the question and write the answer in the space provided.

12. Why does a mean need to be determined for an experiment?
