

Understanding Science Facts, Concepts, and Vocabulary

The percentage of correct responses to most of the NSF survey questions pertaining to basic science facts, concepts, and vocabulary has remained nearly constant. For example, more than 70 percent of those surveyed knew that:

- Plants produce oxygen.
- The continents have been moving for millions of years and will continue to move.
- Light travels faster than sound.
- Earth goes around the Sun (and not vice versa).
- Not all radioactivity is manmade.

In contrast, about half the respondents knew that:

- The earliest humans did not live at the same time as dinosaurs.
- It takes Earth one year to go around the Sun.
- Electrons are smaller than atoms.
- Antibiotics do not kill viruses.
- Lasers do not work by focusing sound waves.

A strong, positive relationship exists between number of correctly answered questions and level of formal education, number of science and mathematics courses completed, and attentiveness to S&T. For example, those who did not complete high school answered an average of 50 percent of the questions correctly compared with scores of 63 percent for high school graduates, 77 percent for college graduates, and 80 percent for those who earned graduate or professional degrees.

In addition, only 22 percent of respondents were able to define *molecule*, and 45 percent gave an acceptable definition for *DNA*. Although the percentage of correct responses to these questions was considerably lower than that for most of the short-answer questions, it is noteworthy that the percentage of correct responses increased in the late 1990s.

A higher percentage of men than women answered every question but three correctly. The gender gap was 20 or more points for four questions:

- Lasers work by focusing sound waves (61 percent of men compared with 30 percent of women).
- Light travels faster than sound (89 percent of men compared with 65 percent of women).

- Earth takes one year to go around the Sun (66 percent of men compared with 42 percent of women).
- Earth goes around the Sun and not vice versa (86 percent of men compared with 66 percent of women).

More women than men answered the following questions correctly:

- The father's gene decides whether the baby is a boy or a girl (72 percent of women compared with 58 percent of men).
- Antibiotics do not kill viruses (55 percent of women compared with 46 percent of men).