Britannica EDUCATION

Name: **Date:**

Science and Society

Instructions: Read the article and examine the image to answer the questions below.

Humans incessantly explore, experiment, and examine the world. The active process by which physical, biological, and social phenomena are studied is known as science. Political, social, and economic concerns can affect the progress of science and vice versa. Scientific understandings can be used to inform decision-making at the individual, community, state, national, and international levels. Although scientific knowledge can describe consequences of actions, scientific knowledge is not responsible for society's decisions.

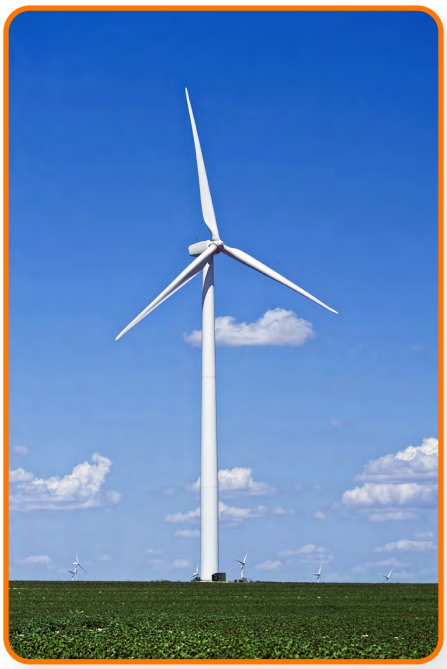
Scientific Progress Affects Society

Science plays a major role in society, and even nonscientists can appreciate scientific progress. Because of science, human understanding of the past, present, and future is constantly in a state of flux. For instance, decades ago the notion of identifying the entire genetic code of an organism would have seemed an impossible feat. Today it is a mark of scientific progress.

Scientific and technological advances affect nearly all aspects of everyday life. For instance, if electricity had never been discovered, electric appliances, heaters, and lights would not exist. Electronic components found in radios, televisions, computers, and cell phones are smaller and more reliable than before. Advances in electronics are responsible for what is called the digital age. Through computer technology, information can be processed and communicated globally in seconds.

The battle against disease and illness also gains much from science. Surgical procedures, including those for organ transplantation and coronary bypass surgery, become safer as scientific knowledge grows. Many procedures have also been improved because of the development of specialized medical instruments. Some instruments enable physicians to see inside the body without making a single incision. Others can carry out essential bodily functions, such as pumping blood or breathing. Medical research has led to the development of vaccinations and pharmaceutical drugs to prevent or treat many life-threatening diseases and disorders.

Another example of scientific advancement that affects society is the improved understanding of the world's limited supply of petroleum. Concerns about the world's future energy needs have resulted in the study of alternative energy resources, which include solar energy, nuclear energy, wind energy, wave energy, and energy from Earth's own internal heat.



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Wind Turbine

Wind energy can be converted to electrical energy used to power homes, schools, and businesses.

Society Affects Scientific Progress

Economic factors can affect the speed and shape the focus of scientific progress. Scientific research can be extremely expensive, especially when it involves the use of costly equipment. Scientific research may be funded by governments, industries, foundations, or universities. In the United States, the federal government sponsors many projects in the area of national defense and space exploration. In 1950, Congress passed an act that established the National Science Foundation. The purpose of this independent federal agency is to develop a national science policy and to support basic scientific research and education. Foundations such as the National Heart Association and the American Cancer Society are devoted to research concerning human health.

Political and other social factors can also influence the focus of scientific research and the application and use of technologies and scientific knowledge. For example, the use of recombinant DNA in agriculture has allowed scientists to create crops that possess attributes that they did not have naturally and that improve crop yield or boost nutritional value. Such crops are termed genetically modified organisms (GMOs). Some government agencies and ecologists, as well as numerous consumer groups, have voiced serious reservations about the safety of such organisms and the products produced using them. In response, some countries have banned GMOs. But in the United States, where political opinions are different, the vast majority of the soybeans, cotton, and corn raised commercially are genetically modified.

Science and society are intertwined in many ways. Scientific and technological advances can change people's lives, while economic, political, and societal pressures can change the course of scientific research and advancement.

1. What is the main idea of this article?
   - **a.** Scientific progress is shaped by society.
   - **b.** Society and science affect one another in many ways.
   - **c.** Scientific research can be affected by economic factors.
   - **d.** People's lives are affected by many scientific advances.
2. Which is a synonym for the word *essential* as it is used in this sentence from the article? Others can carry out *essential* bodily functions, such as pumping blood or breathing.
   - **a.** required
   - **b.** inherited
   - **c.** advanced
   - **d.** complicated

3. Use an example from the article or your own experiences to describe ways that science and society influence one another.

Science and Society Answer Key

1. **b.** Society and science affect one another in many ways.
2. **a.** required
3. Use an example from the article or your own experiences to describe ways that science and society influence one another.
   An example of how science and society influence one another that I have experienced is the development of AI and how society reacts to it. As the ability of AI to carry out tasks has increased, some people have become more open to using AI in schools. Others disagree with any use of AI in schools. School regulations about the use of AI determine how I can use this technology during the school day and for school work.