

Ideas That Change Life

Trace how discoveries, technology, and decisions shape society.

6.18 "Science, technology, and society. The student understands the influences of science and technology on contemporary societies. The student is expected to: identify examples of scientific discoveries, technological innovations..."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle each scientist, discovery, or technology. Underline resource, economic, or political factors, then number each predicted future impact 1, 2, 3, and so on.

From Observation to Impact

- ① In 1928, Alexander Fleming noticed that mold killed some bacteria in a lab dish. His observation helped lead to penicillin, an antibiotic that has saved many lives. Scientists later learned how to produce penicillin in large amounts, turning a discovery into a widely used medical technology. During World War II, factories in the United States and Britain made more of the drug. This work showed how a scientist's careful observation, research, and manufacturing can change health around the world.
- ② New technology is not used everywhere in the same way. Solar panels turn sunlight into electricity, but a community needs money to buy panels, workers to install them, and materials such as glass and metals. Sunny places may produce more solar power than cloudy places. Governments can shape use too. A city might offer tax credits for solar systems, while another government might spend more money on coal or oil. These economic choices and political decisions affect which energy technologies people use.
- ③ Future innovations could bring benefits and new problems. For example, cheaper batteries could store electricity from solar and wind power for use at night. This might lower energy costs, create jobs making batteries, and reduce air pollution. However, mining minerals for batteries can damage land and use water. Leaders may need rules for mining, recycling, and safe disposal. Different cultures and communities may also debate where mines, factories, or charging stations should be placed. Predictions should name a possible technology and explain linked effects.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 How did Fleming's observation lead to a technology that affected people's health?

2 Name two resources or economic factors that can affect whether a community uses solar panels.

3 How could two different government decisions lead to different energy technology choices?

4 According to the passage, give one possible benefit and one possible environmental concern of cheaper batteries.

3 YOUR TURN _____ Your own words

Choose a future scientific discovery or technological innovation that is not named in the passage. In 3 or 4 sentences, describe one benefit, one possible challenge, and how a resource, economic factor, or political decision could affect its use.

PART 1 • READ AND MARK

Circle each scientist, discovery, or technology. Underline resource, economic, or political factors, then number each predicted future impact 1, 2, 3, and so on. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How did Fleming's observation lead to a technology that affected people's health?	Fleming observed that mold killed bacteria, helping lead to penicillin. Scientists learned to produce it in large amounts, so it could be widely used as an antibiotic.
2	Name two resources or economic factors that can affect whether a community uses solar panels.	Answers include money to buy panels, workers to install them, materials such as glass and metals, and the amount of sunlight available.
3	How could two different government decisions lead to different energy technology choices?	A city could offer tax credits for solar systems, encouraging solar use. Another government could spend more on coal or oil, supporting those energy sources instead.
4	According to the passage, give one possible benefit and one possible environmental concern of cheaper batteries.	Benefits include lower energy costs, battery-making jobs, and less air pollution. A concern is that mining battery minerals can damage land and use water.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A low-cost machine that removes salt from seawater could give dry communities more drinking water. It could lower health risks, but it might be expensive for small towns to buy and run. Governments could fund the machines, while the need for electricity and safe handling of leftover salty water could limit where they are used.

Accept equivalent explanations supported by the passage for Questions 1 through 4. For the open response, accept reasonable predictions about a new technology or discovery when the student includes a benefit, a challenge, and a relevant resource, economic, or political factor.