Timely Technologies

Purpose

Students will explain how societies influence what types of technology are developed and used and identify ways that technology has strongly influenced the course of history and continues to do so.

Materials

For the teacher: chalk, chalkboard
For each student: copy of Black Line Master (BLM) *Timely Technologies*, paper, pen or pencil
For each group of students: research materials on technology

Activity

A. Pre-Activity Preparation

Arrange for the class to go to the library for the research portion of this activity.

B. Pre-Activity Discussion

1. Ask students: "How do consumers influence what technologies are developed? For example, how has the demand for organically grown foods influenced agriculture?" Write their answers on the board under a column labeled "consumer demand."
2. Ask students: "How do government policies influence what technologies are developed? For example, how do environmental laws and regulations affect manufacturing?" Write their answers on the board under a column labeled "government policies."
3. Ask students: "How do corporations influence what technologies are developed? For example, how does competition influence communications?" Write their answers on the board under a column labeled "corporate influence."
4. Explain to students that these are just a few of the ways that societies influence what types of technologies are developed. Ask students if they can think of any more examples.
5. Ask students: "Do you think all countries have made the same technological developments? Why or why not?"
6. Make sure students understand that in all parts of the world, societies' demands, desires, and capabilities influence technological development, and quite often the development is different than it is here in the United States.

(continued)

connecting across the curriculum

English/ Language Arts
Have students write a fictionalized account of a family or person who has been affected negatively or positively by a technological revolution.

EXTENDING THE **ACTIVITY**

Have students conduct research to find out how developments in technology are/were influenced by the U.S. presidents who are/were in office during that time period (e.g., President Reagan and Star Wars).

Standards Links
7.1.5, 7.1.7

Activity (continued) ─────────────────────────

7. Explain to students that they will be investigating some historically significant advancements in technology that were influenced by societal needs.

C. Timely Technologies
1. Pass out a copy of the BLM *Timely Technologies* to each student.
2. Explain to students that they will work in groups to create one of the following: a class activity, a short play, a poster presentation, or some other presentation to illustrate one of the research topics listed on the BLM.
3. Divide the class into groups of three to four students based on their research interests, if at all possible.
4. Have the class go to the library so that each group has access to research materials.
5. Allow ample time for students to brainstorm and then create their presentations.

D. Technically Speaking...
1. Have each group of students give its presentation.
2. Discuss as a class the information presented in each presentation.

Classroom Assessment ─────────────────────────

Basic Concepts and Processes
While the students are presenting, ask questions, such as:

📖 How does society shape technology?

📖 How does technology shape society?

📖 Do past technologies still influence our lives today?

💡 How do you know this?

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When creating your presentation, be creative and make sure to include:
- How and why the technology came about
- How the technology influenced the course of history
- Answers to the questions listed next to your topic

Choose one of the following topics to research:

*Agriculture: Take a look at what the Green Revolution was all about and how it increased cereal crops in many poor countries beginning in the 1960s. What societal problems brought about the Green Revolution? What does the Green Revolution have to do with genetic engineering? What does it have to do with industrial agriculture practices today?

*Manufacturing: What societal interests brought about the industrial revolution? How has this affected today's society? How did changes in manufacturing technologies change the way the average person lived and worked? How did this then change labor laws in America?

*Sanitation: How did literature affect the meat packing industry and the sanitation laws relating to it? Look into how Upton Sinclair's book *The Jungle* influenced people to revolt against the meat industry's practices in the early 1900s. How did this revolt lead to a new law concerning sanitation in other industries?

*Medicine: Why is western medicine considered more advanced than medicine in many less developed nations? What kind of medicine do societies have in poorer countries of the world? Why is it important that the international community look at infectious diseases like tuberculosis even if it is not a problem in developed nations? How can society influence this?

*Warfare: How has government action influenced warfare technology throughout history? How did warfare change after the Civil War, World War I, and World War II? How did society influence these changes? How did these changes influence the course of history?

*Transportation: How did society influence the transportation industry in America? How did advances in land, air, and sea transportation influence the course of history?

*Information processing: How did the computer industry come about? What influences shaped it? What role did commerce play? What role did the government play? Do average consumers play a large role in computer technology development?

*Communications: How has society influenced communications? How have fiber optics, satellites, and wireless communications influenced western society? What societal influences brought about changes in communications technology?

*Space/NASA: How did politics influence space technology? What are some specific advancements and technologies from NASA or other space programs that have changed the way we live?

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Teacher Directions

Make a copy of the BLM *Timely Technologies* for each student. Arrange for students to go to the library at least once or twice to complete their research.

Answer Key

Answers will vary, but could include the following:

Agriculture: The Green Revolution was influenced by the need for high-yield grain in developing nations. In India and Pakistan, the effects of famine influenced the urgency for the Green Revolution to take place. Thus, poverty and hunger influenced the Green Revolution. The Green Revolution was the beginning of genetically engineered farming, which led to increased industrial agriculture.

Manufacturing: The Industrial Revolution was a result of capitalism and an investment in research and development. In America, entrepreneurship drove the demand for invention and increased production. In England, there were many skilled workers, but the need for increased production was the result of market demands.

Sanitation: After people read Upton Sinclair's *The Jungle*, they became outraged at the poor sanitary conditions at meat packing factories. The social outcry lead to the making of the Pure Food and Drug Act of 1906.

Medicine: Western medicine is more advanced than in less developed countries because the government has money to invest in research and development (R & D). Also, there are large pharmaceutical companies that are able to invest in R & D. This is in large part because there are patent laws in western nations that allow a drug company to recover its cost of R & D. In developing nations, nations that are poor, natural medicines are used more frequently than in western nations. These medicines are often quite effective against common ailments, but not against serious diseases.

Warfare: After each major war, warfare technology advances due to increased government spending in this area. The submarine was developed during the Civil War, tanks and aircraft played a new and crucial role in shaping WWI, and Britain began using microwave radar during WWII.

Transportation: Societal influence on the transportation industry is varied. In rural America, cars were used to bring goods to the market in town, doctors used them because they were reliable and quick, and the expanse of the country called for a way to get to further destinations faster.

Information Processing: After WWII, governments were interested in the research and development of computers. Throughout the 1960s universities, large corporations, and the government were influencing technology. The personal computer was introduced in 1981. Since then, the computer market has branched into different markets serving the individual, corporation, university, and government.

Communication: Wireless communications came about mostly due to a concern for public safety. Police and fire departments urged the development of radio transmissions. War also influenced communications technology, especially during WWII. The competition to build satellites was influenced by the cold war and the "space race." Currently, global trade influences much of the direction in and demand for new communications technology.

Space/NASA: The cold war shaped the competition for advancements in space technology between Russia and the United States. Among many other things, students can talk about how space technologies have influenced communications, Earth sciences, and/or weather forecasting with the use of satellites.