

Texas Changes Course

Trace technology from tools to global connections.

7.19 "Science, technology, and society. The student understands the impact of scientific discoveries and technological innovations on the political, economic, and social development of Texas..."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each technology named in the passage. In the margin, number 1 beside each effect on resources and number 2 beside each connection between Texas and places beyond Texas.

Tools, Ideas, and Connections

- ① Early Texas farmers used animal power, simple plows, and windmills that pumped groundwater. These tools helped families grow crops, but work was slow and irrigation could drain local water supplies. Today, tractors, combines, and GPS-guided equipment can plant and harvest larger fields quickly. Soil sensors and drip irrigation help some farmers place water and fertilizer closer to plant roots. These newer tools can conserve water and limit runoff, yet large farms still need land, fuel, repair parts, and skilled workers.
- ② Texas innovators also changed medicine, energy, computers, and space travel. Surgeon Michael DeBakey developed important heart-surgery tools and techniques, while Denton Cooley performed the first successful implantation of a total artificial heart. Pediatric surgeon Benjy Brooks improved care for children. Howard Hughes Sr. invented a rotary drill bit that made drilling through hard rock more effective. Michael Dell built a computer company that sold directly to customers. Astronaut Walter Cunningham flew on Apollo 7, helping test equipment for later Moon missions.
- ③ Technology connects Texas to places far away. Texas energy companies use advanced drilling, pipelines, and ports to move oil and natural gas to buyers in the United States and other countries. This trade can create jobs and income, but extracting and burning fossil fuels can affect land, water, and air. Texas hospitals use medical devices and computer systems made through national and global supply chains. Farmers, manufacturers, researchers, and consumers depend on materials, workers, information, and markets beyond Texas. Decisions about technology therefore bring both benefits and responsibilities.

2 ANSWER WITH EVIDENCE _____ Use the passage

- 1** How did agricultural technology change from early Texas to today? Give one way newer farm tools can affect water or land use.

- 2** Choose three Texas leaders from paragraph 2. For each person, name the field or work connected to that person.

- 3** How can energy technology bring an economic benefit and also create a concern for natural resources? Use details from the passage.

- 4** What two details from the passage show that Texas depends on places beyond its borders?

3 YOUR TURN _____ Your own words

Write exactly four sentences proposing a technology for a Texas community. Name a resource it would affect, explain one benefit and one possible cost or trade-off, and explain one link to people or businesses beyond Texas.

PART 1 • READ AND MARK

Underline each technology named in the passage. In the margin, number 1 beside each effect on resources and number 2 beside each connection between Texas and places beyond Texas. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How did agricultural technology change from early Texas to today? Give one way newer farm tools can affect water or land use.	Early farmers used animal power, simple plows, and windmills, while modern farms use tractors, combines, GPS-guided equipment, sensors, and drip irrigation. Newer tools can conserve water, limit runoff, or help place water and fertilizer near roots.
2	Choose three Texas leaders from paragraph 2. For each person, name the field or work connected to that person.	Answers may include DeBakey, heart-surgery tools and techniques; Cooley, total artificial heart implantation; Brooks, pediatric care; Hughes Sr., rotary drill bit; Dell, computer company; Cunningham, Apollo 7 testing.
3	How can energy technology bring an economic benefit and also create a concern for natural resources? Use details from the passage.	Drilling, pipelines, and ports can move energy to buyers and create jobs and income. Extracting and burning fossil fuels can affect land, water, and air.
4	What two details from the passage show that Texas depends on places beyond its borders?	Texas energy companies sell oil and natural gas to buyers in the United States and other countries. Texas hospitals use devices and computer systems made through national and global supply chains. Other valid details include dependence on outside materials, workers, information, or markets.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A South Texas town could install solar-powered pumps for its water system. The pumps could reduce the electricity made from fossil fuels. Building the panels would use land and materials, so leaders would need to choose a site carefully. Companies in other states and countries could supply parts, while Texas workers would install and maintain them.

Accept responses that accurately explain a proposed technology, a resource effect, a benefit, a trade-off, and a connection beyond Texas. Students may use technologies other than those named in the passage.