



Activity

1

FARM TECHNOLOGY

Technology has made modern farming more productive.

Today's farmers use satellite technologies like GPS (Global Positioning System) and GIS (Geographic Information System) to get information about soil, crops, and livestock. They use this information to improve their farms and protect the environment. Farmers call this *precision farming*. In the past, a farmer might treat his whole crop with pesticides. Today, a farmer can use the data from GIS technology to map which parts of the fields need treatment, saving time and money and helping to protect the environment.

GPS technology helps farmers map fields, guide tractors, and check crops, even at night. GIS technology helps them analyze soil and estimate their harvest. It also helps them decide how much fertilizer or pesticide to apply. Today's farmers also use sensors to collect data on weather and soil health. Some farmers even use drones to help manage their farm, while others are using robots to plow fields, plant seeds, weed, irrigate, and harvest the crops.



Part 1

The science of robotics is modernizing dairy farms, too. Watch the video at www.nytimes.com/2014/04/23/nyregion/with-farm-robotics-the-cows-decide-when-its-milking-time.html to see how. As you watch, think about how milking robots benefit the cows and the dairy farm. Then, answer the questions below.

A. What is precision farming, and how does it help the environment? _____

B. How do Global Positioning Systems help farmers? _____

C. How do Geographic Information Systems help farmers? _____

D. How do robotic milking machines benefit the cows **and** the farmers on a dairy farm? _____

Part 2

In a small group, brainstorm ways robotics might be used in other types of farming. Then, write a proposal for developing a robot to perform one specific farming task. Use the back of this sheet for your ideas.



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