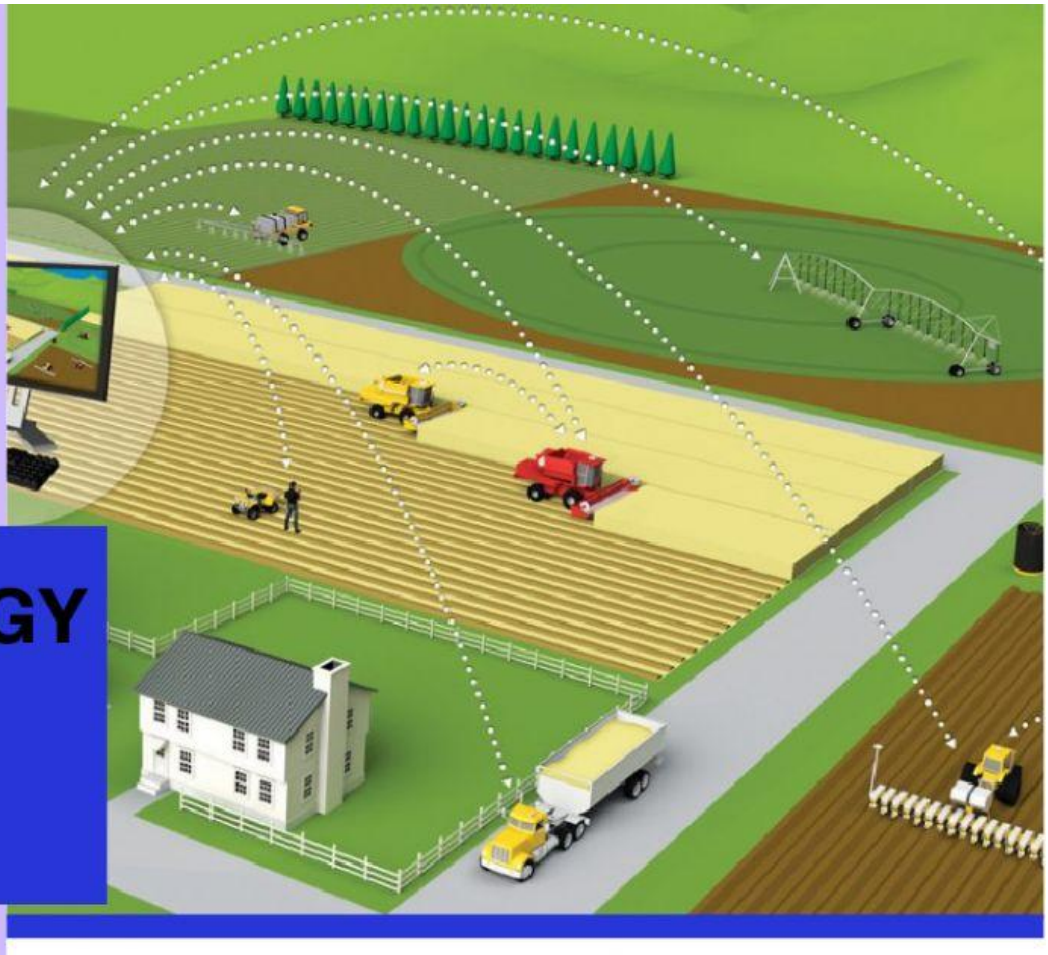
LEVEL IV| UNIT 5

TECHNOLOGY AND FOOD

Reading 3



Skills:

-- Identify sequence
- Select summary information

Getting started:

What is the most bizarre food you have ever eaten?



FARMS OF TOMORROW AND GENETICALLY MODIFIED CROPS

1. Read the first part. Choose the sentence that summarizes each paragraph (1-4).

A. Positioning systems can be used to direct machines and save time and labor. ____
B. To provide enough food for the future generations, food will have to be modified.
C. Technology can be implemented so that farms can be more effective in order to provide food to different people. ____
D. Big farms will have to be automated so that they can be more competitive.

How can technology help farmers deal with increasing demand?

With more and more mouths to feed, farms need to be run as efficiently as possible to satisfy the demand. As a result, many farmers are turning to new technologies for help, using precision systems to make many of their day-to-day tasks easier.

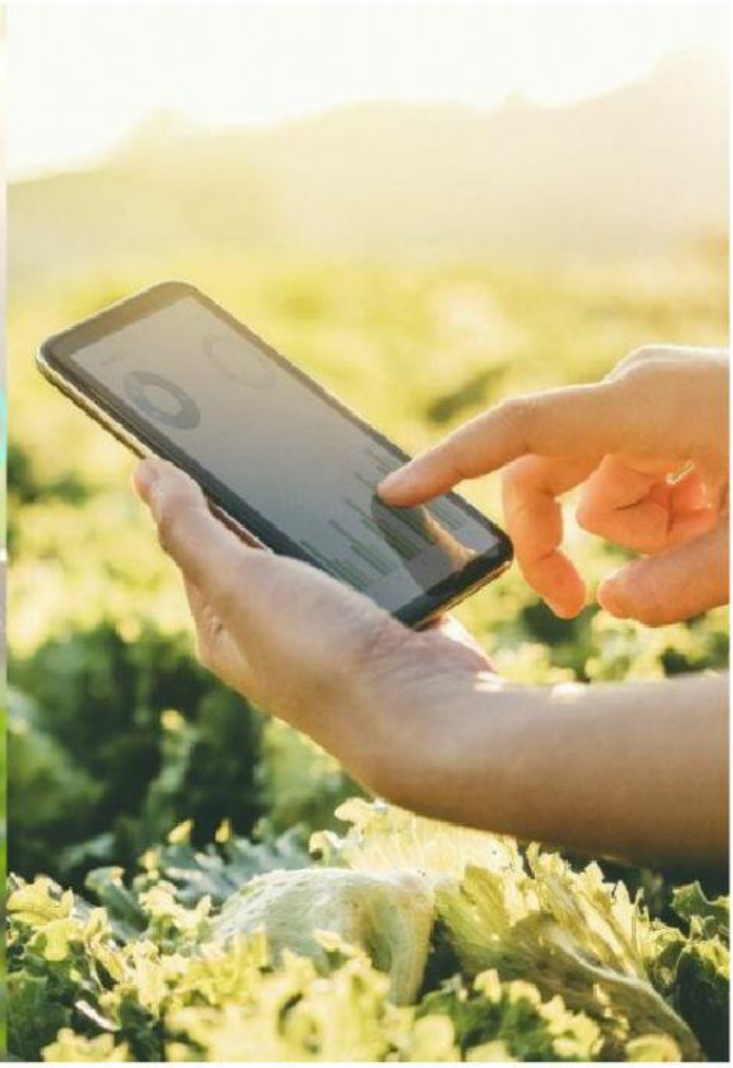
LIVEWORKSHEETS

For example, GPS is already widely used to ensure tractors are driven in straight lines across fields, preventing them from overlapping their routes. This helps to save fuel, fertilizer, and seeds that would otherwise be wasted as the farmer covers the same piece of land again and again. However, in the not-so- distant future, farmers may not need to drive their tractors at all, as several self-driving machines are being development.

Farming machinery is becoming increasingly hi-tech, with robots being used to feed and milk livestock more efficiently. Although some of this modern technology is unaffordable for many farmers now, the farms of the future are likely to be incredibly large-scale businesses, which need to be almost entirely automated in order to be cost-effective. So instead of cleaning the pigs and feeding the cows, future farmers will be able to sit back and let the machines do all the hard work, while they control everything from their smartphone or tablet.

Growing enough food for the rapidly growing population of a planet with a changing climate would be almost impossible without genetic engineering. By modifying the genes of plants, new crops that are resistant to weed-killing herbicides and disease-causing pests can be created, and they could also grow in inhospitable conditions. These genetically modified organisms (GMOs) can also be created to produce fruit and vegetables that stay ripe for longer, reducing wastage, or even contain more of the vitamins we need to stay healthy. Although there is some controversy surrounding GMOs, there is currently no evidence that they are bad for your health as people and livestock have been consuming them for decades with no ill effects.





LIVEWORKSHEETS

How to genetically modify a plant - The simple steps for creating a modified food crop

1. Extract DNA
DNA with the desired characteristic, such as herbicide resistance, is extracted from its host organism, such as a species of bacteria.

____ Method two
The gen is inserted into a bacterium called an agrobacterium, which smuggles it into the plant cell.

____ Plant breeding
The new genetically modified plant can be bred to create a new crop that passes the gene to new generations.

____Method one
Gene guns use a high-pressure gas to fire metal particles covered with the gene into the plant cell.

____Isolate the gene
The specific gene is then isolated and can be cloned to make additional copies for modifying more plant cells.

____Transfer the gene
The gene is then inserted into the plant cell using one of two methods, a gene gun or an agrobacterium.

____Creating young plants
The modified cells are grown in the lab so that they regenerate into young plants.

**Adapted from How it Works - World of Tomorrow. Fifth Edition. DK Publishing.*

What do you think?

Do you think genetic manipulation of organisms is unethical?



LIVEWORKSHEETS