

Genetically-modified (GM) food has to do with "genes." A gene is one of the tiny units that pass on the characteristics of a living thing;



e.g., it gives a carrot an orange color or a human the same kind of hair as his or her mother or father. If a food product has been genetically modified, it means it has had a gene taken from a living thing and placed into it. Scientists who do this work are called genetic engineers. They found that they could change or modify the characteristics of a food crop by using genes from other sources.

### Why are GM foods made?



They are made for reasons such as creating crops that are resistant to insects or disease without having to use harmful pesticides, making food stay fresher longer, or producing a larger crop.

### What are some examples of GM foods?

Rice crops in poorer parts of Asia are now rich in vitamin A to help prevent early blindness among the population, whose diet is mainly just rice. Some crops carry a poison that kills pests. Salmon are being farmed that grow three times faster than a wild salmon, helping reduce overfishing problems while being cheaper to produce.

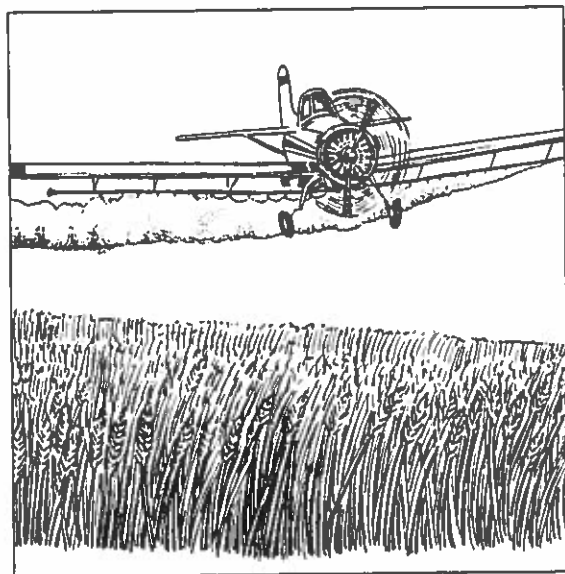
### What are some environmental advantages of GM foods?

- GM foods may help the environment by using less water, fertilizer and pesticide.
- As GM crops generally have larger yields, this means increased production and lower food costs, a factor in attacking the problem of world hunger.
- GM foods containing vaccines for poultry and livestock could boost immunity against diseases in these animals.
- GM crops can be grown in areas suffering from salinity and drought.

### What problems could GM foods cause to the environment?

- Other crops can be fertilized by pollen from GM crops being blown in the wind, resulting in uncontrolled changes taking place to another crop that hasn't been tested to carry that gene.
- Unknown viruses could result from the mass production of GM crops.
- Pests may develop resistance to the crops that have been created to kill them.
- There is concern that GM crops might outgrow the native flora in an area and lessen the amount and range of native plants. This could also lead to a reduced food supply for birds and other wildlife.
- GM crops could cause ecological side effects. Many species of plants and animals are linked in a food chain and the introduction of a plant, for example, that produces a poison that kills a pest might also be harmful to other species in the food chain.

The debate for and against GM foods will continue for some time, until further studies can show for sure whether or not they present serious threats to the environment or are a gift to humanity.





Use the text on page 57 to answer the questions.

1. Write a definition for the word "gene." \_\_\_\_\_  
\_\_\_\_\_
2. Give an example from the text or one of your own to explain something a gene can pass on.
3. Give an example of a GM food and the reason it was developed.  
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\_\_\_\_\_
4. Complete the sentences to explain some environmental advantages of GM foods.

- (a) GM foods use \_\_\_\_\_ water, fertilizer and \_\_\_\_\_.
  - (b) Vaccines for \_\_\_\_\_ and livestock could boost \_\_\_\_\_ against diseases.
  - (c) GM crops generally have larger yields, which means \_\_\_\_\_ production and \_\_\_\_\_ food costs.
  - (d) GM crops can be grown in areas suffering from \_\_\_\_\_ and drought.
  - (e) Some GM crops carry a \_\_\_\_\_ that kills pests.
5. Write a question for these answers.
  - (a) Uncontrolled changes could take place in another crop that hasn't been tested to carry that gene. \_\_\_\_\_  
\_\_\_\_\_
  - (b) It could lessen the amount and range of native plants.  
\_\_\_\_\_
6. Explain how GM crops could upset the balance of a food chain.  
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\_\_\_\_\_  
\_\_\_\_\_

**Fact File**

A GM plant has been grown containing a gene from a luminescent jellyfish. It is planted alongside a crop and glows in the dark when it experiences a lack of water! The farmer then knows to water the crop.