Activity 4.2 Biotech Quiz

Ages: 9 to 18
Style: Adult led, independent study
Life Skills: Listening to others, understanding scientific and technological ideas, developing intellectual curiosity, comparing and selecting alternatives
Time Needed: 15 minutes
Materials Needed: Copies of Activity Sheet 4.2A, pencils

Objectives
To define biotechnology. To understand some uses of biotechnology during the last two centuries. To define genetic engineering.

Before You Start
Make a photocopy of Activity Sheet 4.2A for each person.

Doing the Activity
This activity is background for the remaining activities in Chapter Four. Give the quiz without introduction. After participants have finished, review the correct response.

Checking Progress
Correct answers to Activity Sheet 4.2A are as follows:

1) b
2) a, b, c, and d
3) a, b, and d
4) a and d. C might work, but overfertilizing a plant won't always make it produce more fruit. It may just increase the amount of leaves and stems, assuming it isn't killed by too much fertilizer.
5) d. Biotechnology is old. Our ancestors made wine and bread using yeast thousands of years ago.
6) c. Modern selective genetic engineering began in 1972, when two researchers chemically cut a fragment from one source and spliced it into another.

Pick a Project
Participants can use the quiz to survey people about biotechnology. How many people score 100 percent? How many get four or more correct? Fewer than four? What does this tell your group about science literacy? Participants may want to design an electronic board that lights up and use this quiz to survey people at a science or county fair.
1. Biotechnology (say byc'-o-tek-nawl'-o-je) is (circle one):
   a) using nuclear power to make life from nonliving things such as rocks and soil
   b) using microorganisms, plant cells, or other living things to make things
   c) a rare species of owl
   d) a technique that uses lightning bolts to create new life

2. Circle all the things below made using biotechnology:
   a) bread
   b) cheese
   c) penicillin
   d) delayed-ripening tomatoes

3. Genetic engineering is (circle all that apply):
   a) changing living things by changing their genes
   b) the deliberate transfer of genes between and among species by humans
   c) changing stones into living things
   d) dependent on finding and moving DNA

4. To make a pea plant that produces more peas, we could (circle all that apply):
   a) selectively breed pea plants that produce a lot of peas with each other
   b) use glue to stick many pea pods onto a plant
   c) feed a plant lots of fertilizer and hope it will produce lots of peas
   d) assuming we could locate and isolate the genes that could make more peas, transfer them to our plant

5. Biotechnology began:
   a) about five years ago
   b) about 35 years ago
   c) about 135 years ago
   d) more than 10,000 years ago

6. Genetic engineering techniques have been used to selectively move genes between living organisms:
   a) for about 5,000 years
   b) for about 100 years
   c) for about 25 years
   d) haven't been developed yet