

Pre- and Post-Seed Bank Exploratory Questions

Standard(s):

7.4.3.2.3 Recognize that variation exist in every population and describe how a variation can help or hinder an organism's ability to survive.

7.4.3.2.4. Recognize that extinction is a common event and it can occur when the environment changes and a population's ability to adapt is insufficient to allow its survival.

9.4.4.1.1. Describe the social, economic and ecological risks and benefits of biotechnology in agriculture and medicine.

9.4.4.1.2. Describe the social, economic, and ecological risks and benefits of changing a natural ecosystem as a result of human activity.

Objectives:

The student will:

- a. gain a basic understanding of genetic diversity, genetic conservation, and crop diversity.
- b. understand what a seed bank is.
- c. state the importance of seed banks in regards to crop preservation.

Type of Activity:

- a. Viewing of Video Clip
- b. Questioning

Duration: 50 minutes

Timing in relation to Nobel Conference:

- pre-conference activity
 during conference activity
 post-conference activity

Connection to Nobel Conference:

Cary Fowler, executive director of the Global Crop Diversity Trust

Teacher Tips:

Optional Motivator - Bring in numerous varieties of apple to stimulate discussion on the value of diversity.

Recommended Prior Student Knowledge: None

Concepts, Connections, and Terms:

- a. Genetic Diversity
- b. Genetic Conservation
- c. Crop Diversity
- d. Seed Bank
- e. Extinction

Materials:

Pre- and post-questions (below)
TED Clips

http://www.ted.com/talks/cary_fowler_one_seed_at_a_time_protecting_the_future_of_food.html

http://www.ted.com/talks/jonathan_drori_why_we_re_storing_billions_of_seeds.html

Description of Activity: Viewing Video Clip and Questioning

Procedure:

1. Have students answer pre-viewing questions.
2. View the two TED Video Clips. Encourage students to take notes on topics regarding the prior viewing questions.
3. Instruct the students to answer the Post Viewing question.
4. Have students analyze and discuss pre-and post-viewing questions and answers.

Extensions:

1. Students could research information about their apple variety or if their apple is extinct.

Pre- and Post-Seed Bank Exploratory Questions

Questions prior to viewing TED Video Clips

1. What do you think of when you hear genetic conservation?
2. What do you think is the relevance of crop diversity?
3. What do you think a seed bank is?
4. What would you estimate the percent of apple varieties that have become extinct in the past 130 years?

Questions post viewing TED Video Clips

1. How could a seed bank prevent extinction?
2. Explain the statement "Diversity gives us options in times of change" or "We don't know what the best one is going to be."