



The Impact of Genetically Modified Organisms

Lesson by: Cari Ladd, M. Ed., PBS

Theme: Economics, Science, Civics and U.S. History, ELA

Grade Level: 5-6th Grade

Subject Area: ELA and Social Studies

Summary: This lesson plan utilizes Food, Inc., a documentary that examines food in the United States and the industry that produces it from farming to distributing to consuming. Classrooms can use this lesson to explore the pros and cons of using genetically modified seeds.

Standards:

ELA

- [CCSS.ELA-LITERACY.RI.6.1](#) Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- [CCSS.ELA-LITERACY.RI.6.2](#) Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- [CCSS.ELA-LITERACY.RI.6.6](#) Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.
- [CCSS.ELA-LITERACY.RI.6.8](#) Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.
- [CCSS.ELA-LITERACY.W.6.1](#) Write arguments to support claims with clear reasons and relevant evidence.

Preparation: Film Clip: "From Seed to the Supermarket" (length 9:50)

The clip begins at 1:06:12 with a shot of a sunrise over a farm and ends at 1:16:02 with the on-screen text: "Monsanto declined to be interviewed for this film."

Teaching Time: 30 - 45 minutes

Materials: Film Clip

Lesson Procedure:

1. Discuss GMO
 - a. Define key terms
 - i. Heirloom: Seeds that have not been altered by humans or nature for last 60 years
 - ii. Hybrid: Seeds whose plants have been *cross-pollinated* with plants of another species, can occur in nature or by humans, has been happening for hundreds of years.

- iii. Genetically Modified Organism (GMO): Manmade seeds that can only be developed in a lab
 - b. Ask if students have eaten a genetically modified food on this day
 - i. Point out that food labels don't currently identify ingredients that have been genetically modified
 - ii. But most processed foods contain corn and/or soy ingredients, which are commonly genetically modified
 - c. Share that genetically modified crop seeds have only been available since the mid-1990s
 - i. Companies manipulate the gene sequence in a plant's DNA so that it has special traits (such as: ability to tolerate a specific weed killer while the plants around it die)
 - ii. Companies patent these genetically modified seeds, which gives them the legal right to control the use of any seed that contains their patented gene sequence
2. Show the class the video clip "From Seed to the Supermarket." Focus students' attention by asking them to take notes on what those in the film voice about genetically modified seeds.
 3. Have students write an argumentative paper. Make sure they support their claim with clear evidence. Students may be given the option to take paper home to finish.

Wrap up:

As a class, regroup and discuss what was learned from watching the documentary clip and writing papers.

Extensions:

1. Students conduct cross-pollination plant experiment
2. Students with opposing claims debate and/or present claims