



Invasive Species: Introduced or Accident?

Science, Language Arts and Social Studies

Brief Description:

Introduced species become invasive problems when they multiply rapidly and/or have no limiting factors – predators, diseases, competition – that slows their spread. Some species have been introduced intentionally either sometime in the distant past or more recently to serve a purpose. European honey bees were intentionally introduced to pollinate the crops that Europeans brought with them as colonists to the new world. Honey bees became an invasive species but a species that we depend upon to help produce most of our fruits and vegetables. Africanized honey bees were accidentally introduced. While being researched in South America they became free and have traveled north into the United States. This lesson will examine the intentional and unintentional introductions of species that become invaders.

Objectives: Students will be able to:

1. Identify invasive species that were intentionally introduced to serve a purpose in the landscape, food system or fill another need; and
2. Detail the steps to ensure that species introduced today do not become invaders.

Getting Started

- Prior to conducting this lesson, complete the lessons introducing the concept of invasive species such as; *Florida's Invasive Species, Invasive Diseases, and Place Invaders*.
- Make copies of *Introduced or Accidents* – one per student.

Materials:

- Copies of student handout
- Computers with Internet access

Background

While many invasive species have been introduced accidentally, there are others that were intentionally brought to the United States to serve an intended purpose. We have brought plants and animals here for their horticultural, ornamental, or economic value. But once the plant was introduced its potential as an invasive weed was realized. A well-known example is kudzu. It was introduced as a rapidly growing forage crop for livestock and for use in stabilizing soil in the southeast in areas of serious soil erosion, highway construction or development. Very quickly this plant took over in the Southeastern United States where it smothers trees and other vegetation. The sheer volume of its vegetation and manner that its leaf surface covers other vegetation alters the ecosystem significantly. The same can be described for insects and mammals.



Activity One – Invasive Species Mean Big Trouble

1. View the videos *Plants Out of Place* (12:15mins) and/or *Defending Favorite Places* (26:53mins) and/or *Dangerous Travelers* (26:01mins) at <http://www.invasive.org/video/>.
2. Discuss what characteristics make a species of plant or animal an invasive species and the impact those characteristics have on the native species.
3. Ask students, “Why are invasive species are a problem?”
 “Why are invasive species more of a problem today than in the past?”
 “Do invasive species cost taxpayers money? How?”

Activity Two – Introduced or Accidents?

1. Assign each student to an invasive species listed on the handout “Introduced or Accidents?” (Thirty five species have been listed to cover the largest class size. To cover all species additional species can be investigated for extra credit.)
2. Have the student research their invader on the Internet and determine if it was introduced intentionally or accidentally and describe how. Have students use www.invasive.org The Center for Invasive Species and Ecosystem Health at <http://www.invasive.org/>, search for Invasive Species at the National Ag Library at <http://search.nal.usda.gov>, www.myfwc.com/nonatives, www.floridainvasives.org or Protect U.S. <http://www.protectingusnow.org/>.
3. Have each student share their information with the class and record the information on their handout.
4. Hold a class discussion about the impact of intentional introductions and how such actions can be prevented in the future.

Activity Three - Preventing the Accidental Introduction

1. Discuss with the students that many people do not understand that they can cause the introduction of invasive species by their own actions.
2. Bringing plants, fruits, vegetables, and foods with you as you travel from one country or one continent to another can mean that weed seeds, insects or diseases on those foods could be introduced to a country or continent where they did not exist.
3. To prevent that from occurring, there are laws in place to prevent plant and animal material from traveling with tourists. You can have students research these laws.
4. The USDA has the Beagle Brigade at International Airports and border crossing to sniff out these invaders. Show students *The Beagle Brigade* at America's Heartland http://www.americasheartland.org/video/306_1_beagle_brigade.htm
<http://www.youtube.com/user/fdacsdpi#p/a/u/0/SxSjkgci8xw>
5. or you can search YouTube for more videos. Share that other accidental introductions can occur accidentally on the tires of off-road vehicles, automobiles, heavy equipment, ballast in ships, and on sporting boats. Have students identify one species that spread in this fashion and create a PowerPoint presentation on it. Some examples: water hyacinth, hydrilla, air potato and mimosa.



Activity Four- When Pets Become Problems

1. Have the students read *Bug Smuggling Can Mean Big Trouble* Science for Kids, Agricultural Research Service USDA at <http://www.ars.usda.gov/is/kids/insects/story26/bigbeetlehome.htm>
2. Discuss why someone would smuggle these insects into the country. Speculate as to the damage the insects would cause or the reaction one would have if confronted with one of these insects in the home.
3. While reading that text, rollover the Fast Fact button and read about the problem of Giant African snails. Ask the students how the snails became a problem and how the problem was solved.
4. Snakes that were once pets are frequently released when they become too large. Aquarium fish and aquatic plants are dumped into toilets or waterways when the aquarium is no longer desired as children grow older.
5. Have students identify five species that have become invaders in this fashion and find images of these invaders. Some examples; iguanas, tegu lizard, and Burmese pythons.
6. Make a classroom bulleting board of these invasive species.
7. Discuss the individual's responsibility to prevent these species from becoming invasive.

Review and Evaluation

1. Analyze and assess student completion of the *Introduced or Accidents?* handout in activity two.
2. Ask students to create an essay on *Preventing Accidental Invaders* that details their ideas to prevent future invasive species.

Extensions or Variations

1. Have students expand upon the activity in *Introduced or Accidents?* and create a poster project of their selected species focusing on the impact of that specific invader.
2. Have students communicate with local pet stores and animal shelters to determine if they have a role in preventing unwanted pets from being released in the wild and becoming invasive species.

