

Plants of the Melting Pot

Method

Students will compare immigration statistics with the arrival of invasive species to begin to understand how and why invasive plants came to America.

Getting Ready

1. Prepare a timeline on the chalkboard or with a roll of paper (e.g., adding machine paper). Make it long enough to include years from 1600 to present, allowing at least three inches per decade.

Introducing the Activity

The first great wave of American immigration started in the mid-1800s. Not surprisingly, some of the most problematic invasive weeds in the United States arrived at the same time. They didn't come here on their own! They were brought here. Our country was not just a melting pot of people; it was a melting pot of plants!

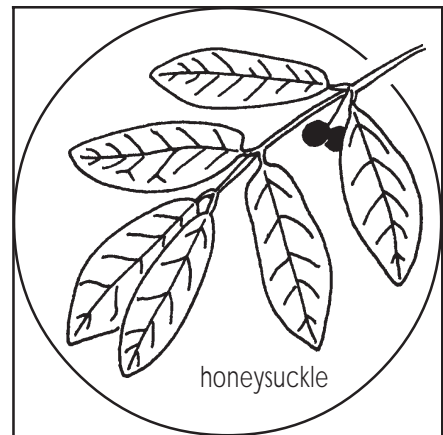
Our well-meaning ancestors brought plants from their home countries for several reasons, such as:

- Agriculture. Plants used for forage for animals. (e.g., reed canary grass, white and yellow sweet clover)
- Food. Plants used as vegetables and herbs for home gardens. (e.g., garlic mustard, chicory, burdock)
- Medicine. Plants used in teas, home remedies, and poultices. (e.g., garlic mustard, dandelions)
- Landscaping. Plants brought for sentimental reasons – to remind homesick immigrants of their homelands. (e.g., exotic honeysuckle, dame's rocket)

More recently, plants have been brought for:

- Wildlife habitat. Plants imported to provide food and cover for wildlife. (e.g., exotic honeysuckle, multiflora rose)
- Erosion control. Plants used to stabilize slopes. (e.g., crown vetch, reed canary grass)

Other plants arrived by accident. Canada thistle seeds, for example, may have come to this country in mattresses stuffed with dried weeds, shipments of cattle feed, dirt used as ballast in ships to provide stability, or someone's pant cuffs.



Objectives

- List three reasons why non-native plants were brought to the United States.
- Locate on a map where the most troublesome invasive weeds came from.
- Compare the arrival of immigrants with the arrival of invasive plants.

Grades

6 – 12

Group Size

Pairs

Activity Time

One or two 50-minute periods

Setting

Classroom

Materials

- Large world map
- Timeline
- Sticky notes
- Access to Internet or copies of plant fact cards

Academic Standards

Grades 6 – 8

- Environmental Education: B.8.10, B.8.18
- Math: A.8.1
- Social Studies: A.8.7, A.8.11, B.8.12

Grades 9 – 12

- Science: A.12.2
- Social Studies: A.12.7

Doing the Activity

1. **Ask students to imagine they are immigrants.** Tell them they will be moving to a faraway country that they know little about. They have heard the conditions are harsh and unfamiliar. Talk about what kinds of plants they would take in order to ensure survival. Be sure that students consider taking plants that will provide food, shelter, clothing, and medicines in the New World.
2. **Post the immigration data.** See page 77.
3. **Ask students to graph the data.**
4. **Assign an invasive plant to each pair of students.** Use plants on page 78. Give students the common and scientific names. If time is short, cut the page apart and give each pair of students one of the plant information cards. Otherwise, make sure students have access to reference books and/or the Internet. Ask them to find out the following information for their plants:
 - From what region did your plant originate?
 - When did your plant arrive in America?
 - Did people bring it intentionally or did it arrive by accident?
 - If people brought it intentionally, why did they bring it?
5. **Locate information about the plants' origins on a world map.** On a sticky note, each pair of students should write their plant's name. Taking turns, students can attach the names of their plants to the regions where they originated.
6. **Construct a timeline of invasions.** On a sticky note, each pair of students should write their plant's name and when it was introduced. Ask students to place the sticky notes on the timeline.
7. **Compile reasons for introduction.** On the chalkboard, each each pair should write their plant's name and the reason it was brought to the United States.
8. **Use the following questions to discuss the information:**
 - How do the reasons plants were brought to the United States compare with the reasons you talked about at the beginning of the lesson?
 - How does the arrival of the first big wave of immigrants correlate with the arrival of non-native plants in the United States?
 - Are non-native plants still being brought to the United States today? (Yes!)
 - Surely, most immigrants no longer fear they will be unable to find food, clothing, and medicines in their new homes.

Why do you think people are still bringing plants to America? (Familiar plants, ornamentals, herbs, folk remedies, special recipes)

- Today, immigrants aren't the main cause of non-native plant introductions. Who is bringing the plants now?

Adapted from "History and Invasive Weeds." **Invasive Weeds.** Betty Czarapata. 1998.

Assessing the Learning

Assess students' ability to work in pairs to gather information about the history of invasive plants.

Extending the Learning

Think about the future. Most scientists predict that major ecological disruptions due to invasive weeds will continue to rise. Ask students to figure out why this might be the case. Here are a few reasons:

- Increased access to remote areas of the world.
- Changes in global trade (e.g., NAFTA).
- Property owners' desire to plant exotic species.

Finding Out More!

Yearbook of Immigration Statistics. 2005. For annual immigration data from 1820 – 2004, visit the Homeland Security Web site and go to Yearbook of Immigration Statistics. <<http://uscis.gov/graphics/shared/statistics/yearbook/2004/table1.xls>>

Decade	Millions of Immigrants
1820 – 1830	0.2
1830 – 1840	0.6
1841 – 1850	1.7
1851 – 1860	2.6
1861 – 1870	2.3
1871 – 1880	2.8
1881 – 1890	5.2
1891 – 1900	3.7
1901 – 1910	8.8
1911 – 1920	5.7
1921 – 1930	4.1
1931 – 1940	0.5
1941 – 1950	1.0
1951 – 1960	2.5
1961 – 1970	3.3
1971 – 1980	4.5
1981 – 1990	7.3
1991 – 2000	9.1

Source: Statistical Yearbook of the INS

<p>Norway Maple <i>Acer platanoides</i> Native to Eurasia Introduced to United States in 1750s Landscape plant</p>	<p>Autumn Olive <i>Elaeagnus umbellata</i> Native to China, Japan, Korea Introduced to United States in 1830s Landscape plant; wildlife food and cover</p>	<p>Reed Canary Grass <i>Phalaris arundinacea</i> Native to Eurasia (There are also native varieties) Introduced to United States in 1800s Forage; erosion control</p>
<p>Garlic Mustard <i>Alliaria petiolata</i> Native to Europe Introduced to United States in 1860s Food plant; medicinal plant</p>	<p>Creeping Charlie <i>Glechoma hederacea</i> Native to Eurasia Introduced to United States in 1840s Medicinal plant; food plant</p>	<p>Japanese Knotweed <i>Polygonum cuspidatum</i>, syn. <i>Fallopia japonica</i> Native to eastern Asia Introduced to North America in 1880s Ornamental plant; erosion control</p>
<p>Oriental Bittersweet <i>Celastrus orbiculatus</i> Native to eastern China, Korea, Japan Introduced to United States in 1860s Landscape plant; crafts</p>	<p>Dame's Rocket <i>Hesperis matronalis</i> Native to Eurasia Introduced to United States in 1600s Garden plant; medicinal plant</p>	<p>Common Buckthorn <i>Rhamnus cathartica</i> Native to Eurasia Introduced to Midwest in 1840s Landscape plant</p>
<p>Canada Thistle <i>Cirsium arvense</i> Native to Eurasia Introduced to Canada in 1600s Unintentional – contaminant in crop seed</p>	<p>Tartarian Honeysuckle <i>Lonicera tartarica</i> Native to Eurasia Introduced to United States in 1750s Landscape plant; wildlife food and cover</p>	<p>Black Locust <i>Robinia pseudoacacia</i> Native to southern Appalachia and the Ozarks Introduced to Midwest in early 1900s Erosion control; fence posts</p>
<p>Crown Vetch <i>Coronilla varia</i> Native to Europe, southeast Asia, northern Africa Introduced to United States in 1950s Erosion control; green fertilizer; ground cover</p>	<p>Japanese Stilt Grass <i>Microstegium vimineum</i> Native to Asia Introduced to Tennessee in 1910s Packing material</p>	<p>Multiflora Rose <i>Rosa multiflora</i> Native to Japan and Korea Introduced to United States in 1830s Erosion control; living fence; snow fence; wildlife food and cover</p>
<p>Queen Anne's Lace <i>Daucus carota</i> Native to Eurasia Introduced to United States by early 1800s Medicinal plant</p>	<p>Princess Tree <i>Paulownia tomentosa</i> Native to east Asia Introduced to United States in 1840s Ornamental plant; lumber; medicinal plant</p>	<p>Garden Heliotrope <i>Valeriana officinalis</i> Native to Eurasia Introduced to United States by 1850s Ornamental; herb; medicinal plant</p>