



*Dedicated  
to Reducing  
Pesticides*

## Unit 4 Lesson 3: Pushy Plants

**Focus Areas:** Plant Lifestyles; Science

**Focus Skills:** recognizing cause and effect, examining habitats, understanding scientific terms

### Objectives

- To understand that plants which “overgrow” their environment threaten habitats
- To understand that other living things depend on plants

### Essential Questions

- Why are some plants considered invasive?
- How do other living things depend on plants?

### Essential Understandings

- Plants whose rates of growth threaten to crowd out other plants and animals that share the same habitat are considered **invasive plants**.
- Plants provide food, medicines, shelter, fuel, and even the **oxygen** that other living things need to survive.

### Background

Over 20,000 plant species are endangered. They are facing the threats of over harvesting and habitat destruction. Human activity is responsible for over harvesting and in many cases the loss of natural habitats. However, man alone isn't solely to blame for the destruction of habitats.

Some plants have very strong survival skills, and they grow so well that they push other plants and even animals out of areas where they are. For example, purple loosestrife and common reed can choke wetlands.

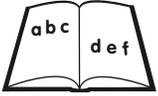


University of  
Connecticut  
College of Agriculture  
and Natural Resources  
Cooperative Extension System



## Unit 4 Lesson 3: Pushy Plants

Oriental bittersweet, although very pretty takes more than its share of nutrients from trees and other plants that grow in the forest. A certain kind of thistle has taken over large areas of grassland where cattle graze.



### Vocabulary

<b>alien species</b>	a plant or animal introduced into a habitat that is not its natural home
<b>biological control</b>	a method of managing pests using their natural enemies
<b>carbon dioxide</b>	gas expelled by animals exhaling, and used by plants to make food
<b>control methods</b>	biological: the natural enemy of the target pest released to reduce pest numbers  chemical: a man-made spray or powder used to destroy the targeted pest  mechanical: removal of the pest by trapping, cutting, mowing, or mulching  physical: digging up or otherwise physically removing the target pest
<b>endangered species</b>	a group of plants or animals that are in danger of becoming extinct
<b>exhale</b>	to breathe out
<b>extinct species</b>	a group of plants or animals that no longer lives on earth



## Unit 4 Lesson 3: Pushy Plants

<b>habitat</b>	the environment in which a plant or animal lives
<b>inhale</b>	to breathe in
<b>invasive species</b>	a plant or animal introduced from another region whose life cycle and adaptations to its environment allow it to take over an area and push other plants and animals out
<b>native species</b>	a plant or animal living in its natural habitat
<b>oxygen</b>	a gas expelled by plants during food production and inhaled by animals to breathe
<b>photosynthesis</b>	the process by which plants store energy to produce food

### Logistics

**Time:** 30 minutes

**Group Size:** 5 to 30

**Space:** an area for comfortable seating



### Materials

Izzy puppet \*

Threatened and Endangered Species

Picture Card Set \*

a copy of the weekly lunch menu

Overhead 1 "Invasive Plants" \*

The Pushy Plant Game board \*

game pieces (Handout 1, "Pushy Plant Game Deck")

dice

\*single copy provided





## Unit 4 Lesson 3: Pushy Plants

### Preparation



1. Collect needed materials from the kit.
2. Review **Background**.
3. Make copies of Handout 1, "Pushy Plant Game Deck".

### Activity



#### Introduction

Using Izzy, discuss with the children their understanding of the term **endangered species**.

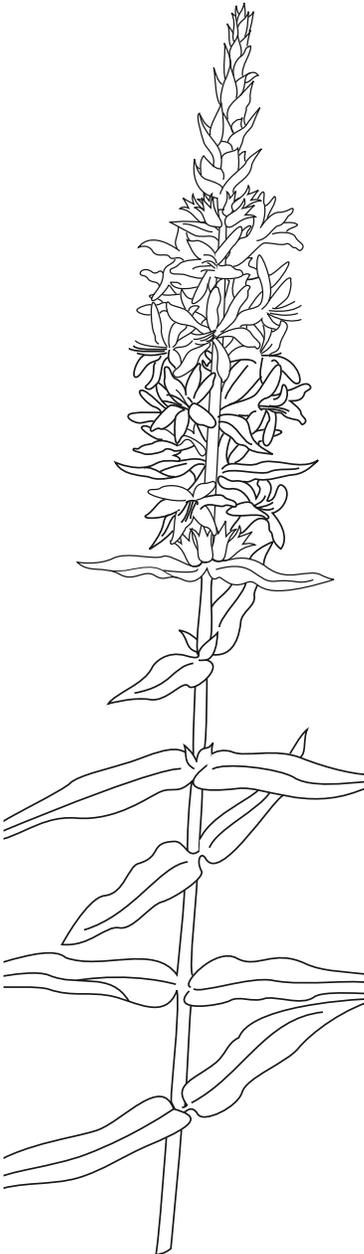
1. Ask the children to give examples. List the examples on the board. (The examples will probably be animals.) Izzy shows endangered plant species cards, and asks, "Should we be concerned with endangered plants as well as animals? (Animals, including man, depend on plants for food, shelter, and even clothing.)"
2. Allow time for the children to survey the room in order to determine what wouldn't be there if we didn't have plants.
3. Go over the lunch menu, listing the items on the board.
4. Izzy asks the children to cross out anything that we wouldn't have for lunch if we didn't have plants. Volunteers come to the board and cross out plant-related items, explaining why each is plant related. For example, milk is from cows but cows eat grass to produce milk!
5. Izzy points out we should be concerned that 10% of all flowering plants are endangered.
6. Izzy asks if all plants are helpful to US. (No! Some plants are poisonous. They are not good to eat, use for shelter or clothing, and others, like poison ivy, can cause itchy rashes!)
7. Izzy points out that even these seemingly useless plants may provide food or shelter to animals other than humans.



## Unit 4 Lesson 3: Pushy Plants

### Involvement

1. Izzy explains that plants are very important for another reason. They help other living things survive! Izzy reminds the children how plants do this.
  - a. All living things need **oxygen** to breathe.
  - b. Green plants are the only living things that make their own food. In this process, called **photosynthesis**, carbon dioxide, which we **exhale**, is taken in by the plant, and oxygen, which we **inhale**, is released by the plant.
  - c. Therefore, the loss of green plants harms us all because the fewer plants we have, the less oxygen is available to breathe.
  - d. Man's destruction of green plants' habitats is a threat to all of us!
2. Izzy explains that man isn't the only one to blame for destroying our plants' natural habitats. A battle for area is being fought within the plant kingdom as well. Some very strong and aggressive plants called **invasives** are taking over pastures, wetlands, and forests around the world and threatening native plants and animals.
3. Izzy shows Overhead 1, "Invasive Plants." He explains that although these plants are pretty to look at, they are a threat to other plants that share the same habitat because they use more than their share of the area's soil, water, and nutrients (food).
4. Izzy explains that invasive species are difficult to control and that several control methods are used.
  - a. **Physical** – pulling the plants up from the area (takes time and care to get the roots of the plant)
  - b. **Mechanical** – cutting, chopping, or vacuuming the plants up (Some plants can reproduce from little pieces left behind.)





## Unit 4 Lesson 3: Pushy Plants

- c. **Biological** – introducing natural enemies like beetles that eat invasive plants (Will the control eat only the targeted plant? How many enemies are needed? How long will it take?)
- d. **Chemical** – using a poison spray or powder in small doses to kill the invasive plants (Chemicals can harm plants and animals that aren't the target invasive plants.)

5. Each method is printed on the board, explained, and discussed with the children. The focus is on the pros and cons of each method. **Note:** Vocabulary words may be recorded in notebooks with definitions if children are developmentally ready.

### Follow Up

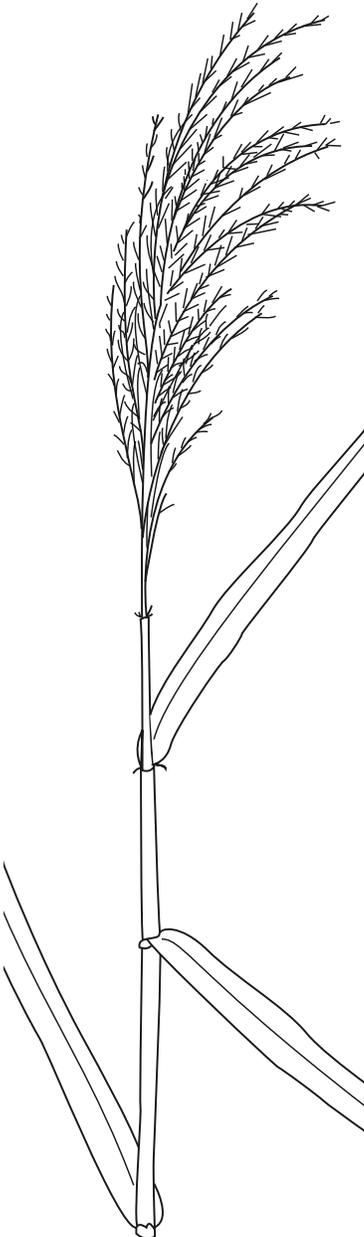
Play the **PUSHY PLANT** game.

1. Distribute Handout 1, “Pushy Plant Game Deck”, and allow time for children to color and cut out cards.
2. Distribute game boards and dice (one per 3 participants).
3. Game rules:

Children take turns rolling the dice, but play as a team.

- a. When an even number is rolled, two purple loosestrife cards from the child's deck are used to cover two beetle squares.
- b. When an odd number is rolled, a beetle card from the child's deck is used to cover a purple loosestrife square.
- c. Play continues until either purple loosestrife or beetles cover the board. The first team to cover all the purple loosestrife wins.

**Note:** The advantage belongs to purple loosestrife because it is a highly invasive species!





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## Notes





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