Invasive Plant Tag

LESSON

GRADE LEVEL K-7

CATEGORY Plants, Animals and Habitats

TOPIC Invasive Species

TIME

30 minutes

MATERIALS

Set of native and invasive plant cards

SETTING

Open space outdoors, gym or cleared area in classroom

GROUP SIZE

Class

SKILLS

Identification, communication, comparison

VOCABULARY

Native, non-native, invasive species, adaptations, exotic species

Overview

This active game of tag helps illustrate how rapidly invasive species can impact ecosystem and provide opportunities to explore actions to reduce these impacts.

Objectives

Students will be able to:

- Recognize some differences between native, non-native and invasive plants.
- Identify a few plants in their local area as native, non-native, or invasive.
- Understand how invasive plants can harm ecosystems.

Background

A native plant is on that has lived in an ecosystem for thousands of years and so is adapted to local weather and climate, soils, and has evolved with other species including predators and diseases. Native plants like red alder, fireweed or salmonberry also stabilize soils or make conditions better for other plants. Native plants provide resiliency and flexibility to survive disturbances such as fires or floods and they add to the biodiversity in the ecosystem. Native plants also provide food and shelter for insects and other animals. Non-native plants are those that are introduced to a place outside their native range. Some, like blueberries and sunflowers, are valued as food for people and animals, and they don't spread or disrupt habitats. In contrast, an invasive plant is a non-native plant that causes environmental, social, or economic harm because it can spread and take over.

Humans can introduce non-native plants into ecosystems on purpose for crops or beautification projects, or by accident such as when home garden waste is not properly composted or disposed. Once growing, non-native plants like scotch broom, knotweed and butterfly bush can have an advantage over native plants by not being eaten by animals, spread easily, or change the habitat to not be suitable for native plant species. Plant seeds can be carried far away in the stomachs of birds who eat the seeds, such as a english holly; or when their

seeds blow away, such as a dandelion. Not all non-native plants have negative impacts. English ivy is one example of an aggressive non-native species that out competes native species by suppressing other plants. can even kill trees. It can grow into thick and woody vines that grow so heavy and dense on a tree trunk that the tree can fall over, or can be strangled and prevent water and nutrients from being transported within the tree.

Hawkweed also crowds out native plants. It grows in dense mats and can spread by seeds, above-ground runners and horizontal roots.

Knapweed produces many seeds that can be spread in hay, by livestock and people. They also produce a chemical that kills surrounding plants and alters soils. Knapweed can also increase runoff and erosion, impacting water quality.

Invasive species (plants and animals) are recognized as "one of the greatest biological threats to the environment and economic welfare of the planet. The threat to biodiversity due to invasive species is considered second only to that of habitat loss". (Secretariat of the Convention on Biological Diversity, [UN Environment Programme]). Many places have invasive species organizations that help prevent and control the spread of invasive species and educate people about what they can do to help.

Material Preparation

Option 1: Prepare one set of double-sided cards with one side a native plant and the other the invasive plant. Use badge holders with clips for students to be able to identify the plant they are playing in this activity and flip the card over when needed. See Resources below for information on invasive plants.

Option 2: Research native plants and invasive plants in your local area to create cards as in Option 1.

Procedure

Round 1

1. Take a walk outside to observe plants in a food garden, at a local park, in the schoolyard or other area. Ask students to come up with their own questions and provide some time for them to observe and find their own answers. Suggestions for questions include: How might they define a native plant, a non-native one, and an invasive one by observing plants in an environment? How do plants grow and reproduce? Do any plants look unhealthy and struggling? Are there others that are growing really well? Do animals interact with all plants? How do First Peoples interact with plants?
2. Locate an outdoor space that is big enough that students can spread out with their arms and legs where they almost touch (a few can be little farther apart). Hand out the native plant cards to each student but reserve one or two students to be birds. Students with plant cards will role play their plant by standing in one spot like roots and spreading out their arms and hands to be branches, leaves and flowers. Ask students to recall how the plants reproduce. Seeds that are light and winged will float away, while seeds with berries may drop to the ground or be eaten by birds.
3. The game begins with all the native plants standing still and imagining their legs are plant roots that go deep into the ground. Students playing plants move their arms, hands, and bodies to symbolize seed dispersal either by releasing them into the wind, or encasing them in fruit that drops off or is eaten by birds. Option: Before playing the game lead students through a role play of being a curled up seed that has sprouted and grown into a mature plant that develops flowers and then fruits with seeds to be dispersed. The remaining students who are birds should visit plants and pretend to eat fruit, or pick up seeds on their legs and feet.

Round 2

4. Change the cards so that students have different ones. This time reserve a few students to be birds and a few more students to play invasive plant species. Once the students have established themselves again, suggest how the invasive plants came to be introduced into this ecosystem. For example, scotch broom was deliberately planted by humans in highway landscaping projects. The students with the invasive plant cards should move into the ecosystem and plant themselves. Then, the invasive plant can reach out with its arms and one leg to release its seeds. If they touch a native plant, the native plant should flip their card to become the invasive plant and they should behave the same way. Birds can explore the ecosystem and if they visit an invasive species they will spread the seeds to other areas and plants.

5. Debrief and Assessment. Allow the activity to play out and ask the birds to fly around again and report back to the whole group what they found and observed. Did the birds find anything to eat? How did the students feel about becoming all the same species? What would happen to other animals that depend on the plants before the invasive species took over? Can they think of situations where a non-native plant won't have a negative effect upon an ecosystem? How might a bird feel if it revisited the ecosystem after the invasive species took over? Why are native plants in an ecosystem important?

Extentions

1. Brainstorm ways to support native plants.
2. Find out more about the plants that we eat, and where they come from. Are they native or non-native?
3. Explore First Peoples relationships with native plants in your local area. Learn their names in the local Indigenous language.
4. Consider starting a native garden at the school with the class.
5. List ways to protect native plants when camping or visiting parks: e.g. clean off mud and plant seeds and parts from clothing to prevent the spread of invasive species.

Options: This activity can be played as an active game of tag or musical chairs. Try it with native and invasive animal species in your area.

Resources

- **Invasive Species Council of BC:** *bcinvasives.ca*