

Weed Warrior Program - Added Activities

Adapted from the Green Teacher Book Teaching About Invasive Species

From Here – From Away

An activity that teaches the difference between native plants and animals and the invasive species that have made themselves at home.

Purpose of this activity is to help students understand differences between native species and introduced species and to help students understand the differences between non invasive species and invasive species.

Material:

Pictures of plants and animals – some not invasive and some invasive / some indigenous and some introduced (horses, dandelions, house cat, seems like they are from here but were indeed introduced)

Two signs: From Here – From Away

Procedure:

Safety: Student will be moving from one area to another so they need to watch where they are going and not bump anyone.

Put up signs in two areas about 10 meters apart one – **From Here**, one – **From Away**.

Tell the students you are going to hold up a picture of a plant or animal and they are to run safely to the From Here sign if it is a native plant or animal or to the From Away sign if it is an introduced plant or animal.

Define **From Here** as a plant or animal living in this ecosystem before 1492, when Columbus sailed the ocean blue.

Define **From Away** as species being introduced to the ecosystem after 1492.

Explain that “native”, “indigenous” and from within its normal range all mean **From Here**.

“Exotic”, “introduced”, from outside normal range all mean **From Away**.

Hold up a picture of a plant or an animal and say its name. Give the student time to think, then say Go.

The students should run to the sign which indicates From Here or From Away.

Tell them to make up their own mind and not be swayed by the group. The group is not always right.

After the dust has settled, discuss whether the plant was from here or from away. Repeat the process for 15 to 20 plants and animals.

Follow up discussion:

Give the student a chart with From here – From Away (See Page 3)

Again show pictures or name plants or animals and have the students print the name of the species in the appropriate quadrant.

Be sure to point out that the invasive species are not villains. They are only doing what all species try to do – reproduce their own kind. The real “villains” are those that through ignorance or malicious, selfish, intent to introduce invasive species into ecosystems. It is difficult to anticipate the consequences of introducing exotic species into an ecosystem.

exotic species into an ecosystem. Many well meaning, well educated, biologists have tinkered with ecosystems with disastrous unexpected results. For example the introduction of mysis shrimp into Okanagan Lake in B.C. introduction of rabbits to Australia, and introduction of Starlings and English Sparrows to Central Park in New York.

It is often difficult to find examples from quadrant two, however the effects of climate change are having an impact and ranges are changing. In B.C. for example, the Mountain Pine Beetle, which is from here has become invasive, devastating the Lodge Pole Pine forests.

Create Your Own Invasive Species!

Build A Species – dream up the perfect invasive, one that is built to last in its new home.

All living things have habitat that provides them with their essential needs. Plants and animals are specifically adapted to the habitats and ecosystem in which they live. Animals and plants introduced into ecosystems by humans or other means often cause problems, as these invaders can take over the food, shelter and space of native species. Many invasive have selective advantages over a native species – specific characteristics that make them good invaders!

In this activity students will explore the key characteristics of invasive species – what makes them successful in a specific ecosystem – and create an imaginary plant or animal that could become an invasive species on your school grounds, in a local park or a selected ecosystem.

Materials:

Paper, Art supplies

Four main characteristics of invasive species:

1. They can be prolific seed producers/ reproducers.
 - Some weeds produce thousands of seeds per plant e.g. purple loosestrife can produce over 300,000 seeds annually
 - Seed viability: Seeds can lie dormant for decades e.g. gorse seeds have a hard coat and can persist in the soil for 25 to 40 years
 - Zebra mussels, an invasive species from Europe that has established itself in the Great Lakes can produce up to 1 million eggs a year.
2. Their seeds spread easily and effectively.
 - Burrs and hooked seeds become attached to animals, vehicles and clothing
 - Diffuse knapweed produces 18,000 seeds a year and forms tumbleweeds
 - Leafy spurge seeds float and remain viable for years.
3. They can quickly establish and thrive on disturbed, open ground, spreading and displacing native plants.
 - Roots or other plant pieces can sprout new shoots e.g. Tansy ragwort will sprout from roots, root pieces and crown buds.
 - Some plants release toxins in the soil that prevent other plants from growing e.g. Spotted knapweed (toxin released = catechin)
4. They usually lack natural pathogens or predators.
 - They don't have the predators or diseases that otherwise keep their populations in check in their countries of origin.

- e.g. sulphur cinquefoil and orange hawkweed are not palatable, therefore are not grazed by livestock or wildlife and so spread widely, displacing other forage plants.
- e.g. Purple loosestrife has over 120 species of insects that prey on it in its natural habitat: none are found in Canada.

Procedure:

1. Begin with a class discussion around the differences between native and introduced species, as well as invasive and non invasive species, Have students list as many plants and animals as they can on the board and work as a class to identify the natives, introduced and invasives species on their list.
2. Review the four main characteristics of invasive species
3. Tell students that they will be designing an imaginary plant or animal that could become invasive species in your school grounds, a nearby park or neighbourhood. Have them keep in mind all the characteristics of the chosen location when they are designing their invasive creature, and to get creative and have fun with it – their creature can be as crazy as their imagination can make it .
4. What does the ground look like ? Is it pavement? Gravel ? Dirt ? What is the weather like ? What else lives here ? What are the potential threats to anything that lives here?
5. Next ask students about what their invasive species should look like in order to survive and thrive in this habitat. Think about the species characteristics of the chosen location / ecosystem, and what adaptations their imaginary creature will need to possess. The invasive species has to access food and water, protect himself from the predators, adapt to any changes in climate and reproduce. Ask students to think about : where did it come from ? How did it get here ? How does it move around / spread ? What does it directly compete with in the ecosystem (plants and animals)? What are its impacts on the ecosystem? What are some ways to get rid of it ?
6. Ask students to create a coloured picture of their new species and give it a name. Underneath, write the following information:

If it is an animal: the name of the location it has invaded ? where did it come from ? how did it get there ? how its needs are met: how does it get food and water ? how it finds shelter ? how it moves about its habitat? What its predators are and how it protects itself from these predators? How it goes about raising its young successfully ? how it is designed to live here – what are its special characteristics? What are some ways to get rid of it ?

If it is a plant : the name of the location it has invaded ? where did it come from ? how did it get there ? how its needs are met: how does it get food and water ? How it grows and thrives (size, shape)? How it reproduces? How it moves spread ? What its predators are and how it protects itself from these predators? how it is designed to live here – what are its special characteristics? What are some ways to get rid of it ?

7. Create a class display of all your imaginary creatures