

Going... Going....Gone!

Subject: Environmental Science

Duration: 20-45 minutes

Class size: 15-25

Key Vocabulary: Invasive species, native species endangered, extinct, outcompete

Objectives: The students will be able to 1) Define the vocabulary terms in bold below; 2) Understand the impacts that invasive species have on native species; 3) Explore ways in which invasive species are introduced to an area; 4) and learn ways we can help stop the spread of invasive species and restore natural habitats.

Method: Every student will be given a species card; some will be native species (indicated in green on cards) while others will be invasive species (indicated in red on cards) found in NY . There are a total of 26 cards with 16 being native species cards and 10 being invasive (all of which can be replicated or added to if class size is larger). Each student will also receive resource chips or a token (suitable token suggestions: bingo or poker chips, popsicle sticks...) which will be used throughout the game to symbolize resources such as food, water, and shelter and to demonstrate competition for resources between natives and invasives. Some found it useful to refer to the resource chips as “power chips.”

Students will hold their species card so everyone can see it and form a circle around the presenter. The presenter will go through the introduction/background listed below to make sure that students understand the impacts that invasives have on natives and to make sure they learn the vocabulary words (**listed below in bold**). After the setup and introduction, the presenter will explain the rules of the game.

Step 1:

Ask students to make a circle around the presenter. Involve chaperons to help you do this.

Step2: Give each student a species card. Invite a couple volunteers to help if needed, **tell students to read their cards quietly to themselves while you do this** (*pair appropriate invasive species with the native species it impacts, view bottom left side of card to learn which cards are paired together*) there are 26 cards total (16 native 10 invasive)

Step 3: Give each student 5 resource chips or tokens (ex: bingo chips, poker chips, popsicle sticks...) This represents their food, water and other resources. Involve a volunteer if needed.

Step 4: Introduction/background: Introduce yourself!

Ask students to define the difference between and invasive species, and native species and then share the following definition: An **invasive species** is an organism such as a plant or animal that causes harm to the economy, environment or human health. While a **native species** is an organism that is naturally part of a habitat without any involvement of human activity. Some examples include: maple trees, deer, trout....

Ask students if they can explain how invasive species can impact native species and then share the following explanation if needed.

Invasive species impact native species because they often **outcompete** native species. This is because invasive species are not originally from the habitats they invade, and therefore, are lacking natural **predators** to help keep their populations in check. Plus, in most cases, invasive species are highly **adaptive**, meaning they can quickly learn how to survive giving them an advantage over other species.

Ask the students what could happen to native populations if an invasive species was able to take over their habitat and then share the following explanation if needed.

Sometimes, invasive species can dramatically reduce the population of native species causing them to become endangered or extinct. When a species is **endangered** it means that their population size has become so small that they are close to **extinction** (meaning that all the individuals in a group of species have died).

Step 5: Rules of the Game:

Presenters will read off or make up survival scenarios in which invasive species (that are listed on the player's cards) can enter a habitat and the types of native species (that are listed on the player's cards) are impacted. (scenarios that give back resources are printed in brown). If time allows try to mix in some of these scenarios to help show how natural habitats can be restored by people.

The impacted native species will lose resource chips as the game progresses. In some cases, invasive species will lose resource chips, or natives will get back resource chips depending on the scenarios that are revealed.

Players holding the species cards mentioned in the scenarios will read off their cards, starting with the invasive species player first. *Presenters provide guidance as needed.*

Once players with native species cards are down to just 3 resource chips they will notify the group that they are now considered to be endangered and take turns reading off their native species card. *Players will learn about the impacts of various invasive species and about some of the benefits that native species provide to the ecosystem.*

The game continues like this until each player has been given a chance to read off their card. *Presenters may have to intervene or make up scenarios to help the game progress.*

Presenters Notes:

Ask the questions numbered below during or after the game if time allows. Place emphasis on the ways in which invasive are introduced to a habitat and the native species that are impacted. *Encourage players to express how they may feel if the native species were to become extinct. For example, players may enjoy fishing so losing native fish populations may concern them.*

1. What were some of the invasive species we learned about?
2. What were some of the native species that were impacted by the invasive species?
3. In what ways are invasive species spread?
4. What does it mean to become endangered or extinct?
5. Why would it matter if a species became extinct?
6. In what ways did native species gain back resources?