

# Lesson 1: What is an Invasive Species?

Students learn about the issue of invasive species, and what they can do to prevent it!



## Intended Audience

Middle School

## Students Will Be Able To

- Define “invasive species”
- Describe negative impacts of invasive species
- Explain characteristics that make invasive species successful
- Describe how invasive species spread
- Identify ways to prevent and address the invasive species issue

## Activities

- Explore invasive species materials
- “Introduction to Invasive Species” presentation
- Review activities:
  - Loteria game
  - Verbal or written review questions

## Estimated Time

2-3 class periods

## Standards Addressed

- | NGSS       | Common Core |
|------------|-------------|
| • MS-LS1-4 | • SL.6-8.1  |
| • MS-LS1-5 |             |
| • MS-LS2-1 |             |
| • MS-LS2-2 |             |
| • MS-LS2-4 |             |

## Introduction

An **invasive species** is a plant, animal or other organism introduced to an area outside of its native range, usually by humans, which negatively impacts the economy, environment, and health. Invasive species affect all of us, whether we realize it or not. Luckily, invasive species professionals know how to stop most invasive species but we need people’s help reporting them. By learning more about invasive species in Washington, you can help report invasive species and potentially prevent the next invasion!

## Materials

- [“Introduction to Invasive Species” Presentation](#)
- [Loteria Game Boards](#) (different board for each group)
- [Loteria Playing Cards](#) (1 deck)
- Space Markers (e.g. dried beans, tangrams, buttons)
- Optional:
  - [Invasive Species Supply Kit](#)
  - Prizes
  - [“Introduction to Invasive Species” Guided Questions Worksheet](#) (1 per student)
  - [“Lesson 1 Review Questions” Worksheet](#) (1 per student)

## Preparation

- 1) Read the **Teacher Notes** and go through the “Introduction to Invasive Species” PowerPoint presentation to familiarize yourself with invasive species. There are guiding notes that go along with each slide to help you through the presentation.
- 2) Print the “Introduction to Invasive Species” guided questions worksheet, if using.
- 3) Select invasive species to focus on. We suggest setting up enough stations so that students can work together in small groups of 3-4.

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For help selecting focal species you can:

- Refer to the **Regional Lists** included on the **Resources** page which list invasive species of concern for different regions in Washington.
- Contact your local natural resource professionals who should be able to tell you a few invasive species commonly found in your area:
  - Conservation Districts** often have education directors and interns who can help identify local invasive species.
    - o Conservation District Directory: <http://www.wadistricts.org/partnership-directory-4.html>
  - County Weed Noxious Weed Control Board** (NWCB) have information on local invasive plants. Some NWCBs may even be able to do a site visit to identify invasive species on your schoolyard.
    - o Noxious Weed Control Board directory: <https://www.nwcb.wa.gov/find-your-county-weed-boards>
  - Washington State University** (WSU) extension locations and their volunteer Master Gardener educators often have information on local invasive species.
    - o WSU Extension locations: <http://pubs.cahnrs.wsu.edu/location>

If you intend to do **Lesson 3: Be a First Detector**, it would be useful to highlight a few invasive species you may find in your area so your students will have an idea of what to look for.

**Leave these stations in place if you intend to continue to Lesson 2: BioBlitz!**  
**You will use them again.**

4) Set up a research station for each species you select. Include materials such as fact sheets, photos, and specimen models (see **Resources**

page for sources). If available, you may borrow our **invasive species supply kit**, which includes a variety of specimens and educational materials.

Computers will be useful for showing videos, especially during the in-depth data gathering portion of this lesson, as well as to allow the students to look up additional information that may not be explicitly covered in the materials you provide.

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4) Gather supplies for the Loteria review game. Color copies of the game boards and playing cards are included in the invasive species supply kits. Otherwise, you can print your own copies using the included PDFs. See the **Resources** page for a guideline on how to print the Loteria playing cards front and back. You will need to cut out the deck of clue cards and ensure that you have enough space markers and game boards for all of your groups (3-4 students/group recommended).



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## Procedure

### Class 1

#### **Explore invasive species materials (30-40 minutes)**

*While optional, this activity allows students to engage with invasive species specimen in an unstructured way and create their own inquiries. If there is insufficient time, however, you can start with the introductory PowerPoint; students will get to interact with the outreach materials during Lesson 2: BioBlitz!*

Allow your students to explore the different invasive species stations you set up. This is an unstructured time for the students to interact with the various specimen and outreach materials. When they return to these stations in later lessons, there will be worksheets to guide their interactions. During this time, you may ask your students:

- What questions are these objects raising for you?
- Which station(s) do you find the most intriguing?

This can help you understand which invasive species may be most engaging for your class moving forward.

Once your students have had sufficient time to engage with the materials, have students share their experience and questions. You can write their questions and post them in the classroom so students can see if their questions get answered during the “Introduction to Invasive Species” PowerPoint presentation. If the questions don’t get answers, hold on to them- they may be great research topics during later lessons!



### Class 2

#### **Presentation (30-40 minutes)**

Pass out the “Introduction to Invasive Species” guided questions worksheet, if using.

Go through the “Introduction to Invasive Species” PowerPoint with your students. Questions and videos embedded in the presentation enhance the talk and engage the audience, but you may skip them depending on class length. If the videos do not work on your computer, the link for each video is included in the notes for that slide so you can pull the videos up before class and navigate to them at the appropriate times.

## Review

#### **Loteria (10-15 minutes)**

Once you have completed the presentation, break students into small groups of 3-4 to play the Loteria review game. This bingo-style game is a fun, quick review of invasive species and their impacts.

Pass out a Loteria game board and space markers to each group. Tell your class that they need to cover three invasive species in a row to win (if time allows, you could make it so they need to cover the whole board to win). Explain to students that, while the presentation covered

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many concepts and invasive species, some of the game boards include things we have not yet discussed. However, if they listen carefully to the clue cards, they should still be able to infer what the answer is.

As you read the clue cards aloud, groups will work together to match the answers to the spaces on their game board. The first group to fill out their board wins. If time allows, keep playing until you have gone through the entire deck of clues in order to have a full review. Teams can get prizes for finishing first, second, third, etc.

## Review Questions (10-15 minutes)

*Answer the following questions as a class discussion or assign as a written assignment (a printable worksheet with these questions is provided in the **Lesson 1** materials).*

### 1) What is an invasive species?

An invasive species is a plant, animal or other organism introduced to an area outside of its native range, usually by humans, which negatively impacts the economy, environment, and health.

### 2) Think of at least three behaviors or physical characteristics that give invasive species an advantage over native species.

**Explain how this trait helps an invasive species to increase in numbers and spread.**

- Occur in many areas- more places from which it can spread
- Lack natural predators (nothing eats it)- nothing naturally reduces its numbers
- Spread quickly- hard to keep up with removing the invasive
- Grow quickly- hard to keep up with removing the invasive
- Breed early- their kids get access to

resources first and may outcompete native species before they have a chance to use those resources

- Have many offspring- hard to keep up with removing the invasive, more opportunities to spread
- Eat many different things- not impacted as much by the loss of a certain plant or animal in the ecosystem, they can adapt
- Tolerate many types of environments- when they spread, it's easier for them to adapt and thrive, whereas native species often need very specific habitats

### 3) Scenario:

**An invasive plant, the Grandosa, was accidentally introduced to your schoolyard.**

**The Grandosa grows up to 6 feet tall, depriving plants below it of sunlight. It also has deep roots that suck up lots of water. It is spreading quickly. The Grandosa does not have any natural predators, meaning there are no insects or other animals that will help take care of this problem, and it can produce up to 10,000 small, light seeds a year!**

**As the invasive species experts at your school, everyone is turning to you to answer the following questions:**

### a) What are some pathways through which the Grandosa might have been introduced into the schoolyard?

- Seeds carried on the wind
- Someone planted it on purpose, not knowing it was an invasive species
- Seeds carried in from someone's clothes, backpack, etc.



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- Seeds carried on an animal's fur
- A class grew it as a science project and didn't want to destroy the plant afterwards so they planted it outside instead

**b) What effects do you predict the Grandosa might have on the native plants on your schoolyard?**

It can keep native plants from growing because it is taking up all the sunlight, water, and space that plants need to grow.

**c) What effects do you predict the Grandosa might have on the native animals on your schoolyard?**

Native animals depend on native plants for food and shelter. Without the native plants, these animals may get eaten by predators, go hungry, or need to find a new place to live.

**d) What are some solutions you can think of to deal with the Grandosa problem?**

- Report the sighting to an invasive species professional (e.g., Washington Invasive Species Council).
- Research how to remove the plant and plan a stewardship day for the community to remove it.
- Focus on preventing the plant from spreading beyond the schoolyard.
- Create informational brochures, flyers, etc. and post them around the community to teach people about this invasive plant and how to prevent its spread.

**Lesson, introductory presentation, and review game adapted from West Coast Sea Grant's "Menace to the West" curriculum. Original materials found here:**

- Introduction: <https://seagrant.oregonstate.edu/menacetothewest/introduction>
- Loteria game: <https://seagrant.oregonstate.edu/menacetothewest/lesson/loteria-game>