



Most Unwanted! Poster Researching and Creating Media that Communicates

Grade

Grades 6–12

Length

2–4 weeks

Subjects/strands

Biology, ecology, science inquiry, research. *Teachers can adapt the project requirements to meet specific classroom benchmarks.*

Topics

Watersheds, structure and function, habitat, interactions of organisms, researching a topic, presenting research, characteristics of invasive species, life cycles.

MOST UNWANTED! POSTER

Adaptable for all grade levels

LEARNING OBJECTIVES

In this learning experience, students will

- learn in-depth details about a specific invasive species
- conduct scientific research on a selected invasive species, becoming the classroom expert on that species
- design a poster to convey the information collected in a way that promotes audience knowledge of invasive species, their impacts, and what individuals can do to control or eradicate invaders
- present posters to classmates on the biology of the invasive species, the impact their invader has on other species (including humans), and what needs to be done to control and/or eradicate the species from the “invaded” environment

INTRODUCTION

In this teaching-through-communication lesson, each student will select an invasive species to study and develop enough expertise to share information with others in a *Most Unwanted!* poster.* You and students can browse possible species and access resources at MenaceToTheWest.org or through other resources as indicated in the Preparation section of this lesson plan.

*Although this lesson plan focuses specifically on poster design and production, other formats can be used. See advanced communication design lesson plan, *Most Unwanted! Team Media Design*, for ideas using other media to convey information about invasive species.

Students will present their knowledge to their classmates by designing a poster. Through this process, students gain in-depth knowledge about one species while researching their poster subject. In addition, students will learn about other invasive species and practice presentation skills when presenting their poster to the entire class at the end of the project.

We invite you to share your students’ projects with the WISE program so we can showcase their work. Find out how at MenaceToTheWest.org.

BACKGROUND

In this project, students will learn the importance of communicating information about ecological issues to reach different audiences. By conceiving, researching, designing, refining, and executing a *Most Unwanted!* poster to convey this information, they will learn not only about their selected species, but also how to develop a visual communication vehicle that explains how invasive species impact environments and other organisms. Another important aspect of this project is to convey information on how individuals can take action to slow or stop invasions, or to prevent aquatic invasions altogether.

VOCABULARY

Characteristic, common name, ecosystem, habitat, invasive species, kingdom, life cycle, native species, niche, nonnative species, range, research process, scientific name, specialization, thumbnail sketch, vector.

Most Unwanted!

MATERIALS NEEDED

- **Research:** Species guides and the *On the Lookout for Aquatic Invaders* identification guide are available in the Toolkit; printable species guides are also available on the website, MenaceToTheWest.org. Students can also conduct online searches for their particular species and access information from the websites included in the Resources section of this lesson plan.
- **Presentation tools and materials:** Students will need access to word processing and computer graphics program(s), and/or hand-drawing and assembly materials and supplies. Posters should be a minimum of 11 × 17 inches, and all text should be typed.
- **Student worksheet:**
Most Unwanted! Poster

PREPARATION

It is useful to gain some familiarity with invasive species topics before teaching this lesson. Research a list of invasive species in your area to suggest topics for your students. Check with your local, state, or regional Fish and Wildlife office, Department of Agriculture, or county extension office for information and ideas. If you conduct an online search, be sure you are referencing a reputable source, such as a state or federal agency or a university research center. Make these online resources available to your students when they start conducting their own research.

For more general information on aquatic invasive species in the western states, see the introductory chapters of the *Menace to the West Curriculum*, available in the Toolkit or at <http://seagrant.oregonstate.edu/invasive-species>.

PROCEDURE: MOST UNWANTED! POSTER

- 1 Following the instructions on the *Most Unwanted! Poster* worksheet, each student will create a poster or other media project that conveys information about the invasive species he or she selects.
- 2 All information for the *Most Unwanted!* poster project is included on the student worksheet, including design guidelines and checklist, process guidelines, a vocabulary worksheet, and questions for peer project evaluations.

LEARNING OBJECTIVES

In this learning experience, students will:

- Learn in-depth details about a specific invasive species.
- Conduct research on an invasive species, becoming the classroom expert on the species.
- Design a poster to convey the information collected in a way that promotes audience knowledge of invasive species, their impacts, and what individuals can do to control or eradicate invaders.
- Present information to classmates on the biology of the team's species of choice, the impact their invader has on other species (including humans), and what needs to be done to control or eradicate the species from the "invaded" environment.

PRESENTATION AND EVALUATION

Allow between 5 and 10 minutes per poster presentation, depending on your classroom requirements. Students can answer questions (page 3 of student worksheet) while their peers present their work. Make additional copies for students to answer questions on all invasive species presented in the classroom.

VOCABULARY

While researching their poster species, have students complete the vocabulary exercise (pages 3–5 on the worksheet).

- **Characteristic:** A distinguishing trait, feature, or quality of an organism.
- **Common name:** The nonscientific name by which an organism is known, based on the normal language of everyday life.
- **Ecosystem:** A system formed by the interaction of biological and physical components. That is, a community of organisms interacting with their physical environment.
- **Habitat:** Area where a species has the necessary food, water, shelter, and space to live and reproduce.
- **Invasive species:** Nonindigenous species whose introduction and proliferation causes or is likely to cause economic and/or environmental harm or harm to human health.

- **Kingdom:** In biology, a taxonomic category of the highest rank, grouping together all forms of life having certain fundamental characteristics in common. The five-kingdom classification scheme adopted by many biologists includes Animalia (animals), Plantae (plants), Fungi (fungi), Protista (protozoa and eucaryotic algae), and Monera (bacteria and blue-green algae).
- **Life cycle:** A series of changes in form that an organism undergoes, returning to the starting state. It entails the course of development of an organism; that is, from the time of inception to growth to finally maturity, when an organism can viably produce another of its kind.
- **Native species:** A plant or animal species that naturally occurs in an area and has not been introduced from another area, state, or continent. Synonym: *indigenous species*.
- **Niche:** The function or position of an organism or population within an ecological community, based on life history, habitat, trophic position (place in food chain), and geographic range.
- **Nonnative species:** A plant or animal species living outside its natural past or present distribution; includes any part, gamete, seeds, eggs, or propagules of such species that might survive and subsequently reproduce. Because some nonnative species may be harmful or invasive while others are not, this term should be used with great care. Synonyms: *nonindigenous, foreign, alien, and exotic species*.
- **Range:** In biology, the geographical area within which a species can be found.
- **Research process:** Any gathering of data, information, and facts for the advancement of knowledge.
- **Scientific name:** The Latin name of an organism, including genus and species, and generally shown in italics (*Genus species*).
- **Specialization:** The adaptation of an organism to a special function or environment.
- **Thumbnail sketch:** A small drawing on paper used to explore multiple ideas quickly, such as the basic layout of a poster (i.e., where the text and pictorial components will appear and how much space each element will take up). Thumbnail sketches are similar to doodles, but may include as much detail as a small sketch.

- **Vector:** Transportation of a species on or through a pathway via natural or human-made materials such as wind, water, shipping materials, wholesale products, cargo, equipment, people, transport vessels and vehicles, and outboard motors.

SELECTED RESOURCES

The following educational tools are useful for teaching K–12 students about invasive species:

Invasive Species in Oregon

Salem *Statesman Journal*

Ten-month series investigating invasive species. Includes various articles and videos, 2007–2014.

www.InvasiveSpeciesOfOregon.com (search archive)

Nab the Aquatic Invader! Be a Sea Grant Super Sleuth

Indiana-Illinois Sea Grant College Program, Wisconsin Sea Grant Institute, and New York Sea Grant Institute.

National education site on invasive species, developed in collaboration with education and outreach staff of all seven Great Lakes Sea Grant programs.

<http://www.iisgcp.org/NabInvader/>

National Invasive Species Information Center

USDA National Agricultural Library

Educational resources for all levels.

<http://www.invasivespeciesinfo.gov/aquatics/education.shtml>

Oregon Invasive Species Council

Examples of media projects, including Don't Let It Loose poster submissions.

<http://www.oregon.gov/OISC/>

The Silent Invasion

Oregon Public Broadcasting in partnership with the Oregon Invasive Species Council and The Nature Conservancy

Documentary by OPB and partners focusing on invasive species in Oregon. The site includes several short video segments about specific invasive species and case studies.

<http://www.opb.org/programs/invasives/>

Most Unwanted!

STANDARDS ADDRESSED

Common Core Standards

Writing

- Text Types and Purposes W.1, W.2, W.1, W.2
- Production and Distribution of Writing 8-12th grades W.6, W.7
- Research to build and present knowledge W.7, W.8

Speaking and Listening

- Comprehension and Collaboration SL.1–SL.3
- Presentation Knowledge and Ideas SL.4–SL.6

Next Generation Science Standards

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

REPORT INVASIVE SPECIES

Online

Washington: <http://www.invasivespecies.wa.gov/report.shtml>

Oregon: Oregoninvasiveshotline.org

California: <https://www.wildlife.ca.gov/Conservation/Invasives/Report>

Call toll-free

Washington: 1-888-WDFW-AIS

Oregon: 1-866-INVADER

California: 1-877-STOP-ANS