



Lesson Title: Invasive Species Awareness - PSA

Grade: 4-12

Duration of Lesson: 3-50 minute class periods

Brief: Students will create a Public Service Announcement (PSA) informing the public about the threat of invasive species.

Materials:

- 1 Montana Invasive Species Education (MISE) project folder and poster (order at: agr.mt.gov Ag in the Classroom Program)
- 1 set of MISE tattoos or one invasive id picture (pictures Appendix 1)
- Poster board for each student
- Access to computers

Key Terms

Invasive, alien, recreation, pests, wood-boring, defoliator, disease, nematode, terrestrial, aquatic, mollusk, crustaceans, amphibian, and invader

Standards / Objectives

Standards:

Montana Common Core Standards for English Language Arts (MCC ELA)

R. 10 By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in appropriate grade level complexity band proficiently, with scaffolding as needed at the high end of the range.

W.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.

SL. 5 Include multimedia components (e.g., graphics, sounds) and visual displays in presentations when appropriate to enhance the development of main ideas and themes.

Next Generation Science Standards (NGSS)

4. Structure, Function, and Information Processing (4-LS1-1): Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

5. Matter and Energy in Organisms and Ecosystems (LS2.A): ...organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)

MS. Matter and Energy in Organisms and Ecosystems (LS2.C): Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations. (MS-LS2-4)

<u>Understanding(s) /Big Ideas:</u>	<u>Essential Question(s):</u>
Students will understand the threat of invasive species to Montana's farming economy, wildlife, recreation, waterways, and public lands.	What are invasive alien species and how could they affect Montana?
Students will know: Invasive species can take over any landscape and are easily transferred by human activity. Invasive species should be reported to the proper agency.	Students will be able to: Create a Public Service Announcement (PSA) informing the public about the threat of invasive species.

Performance / Observations

<u>Performance Task(s):</u>	<u>Other Evidence:</u>
Create a Public Service Announcement (PSA) informing the public about the threat of invasive species.	Students will present accurate science based information on invasive species.

**Learning
/ Inquiry Activities**

Introduction:

Species which are non-native (invasive or alien) to Montana interfere and often destroy native plants, wildlife habitat, forests, livestock, waterways, and food crops. These species which may not harm the environment in their native area can cause destruction and major problems when introduced to another area. They are seeking hosts, like you, who will pick them up

while you travel. Once they have landed in your area they will start to multiply and will spread disease, eat with a vengeance, and began destroying.

Invasive species may be insects, nematodes, noxious weeds, amphibians, crustaceans, mollusks, mammals, and more! Over the past couple hundred years many plants, insects, and animals have been introduced into the U.S. Not all of them become invasive and push aside native varieties, but when they do become invasive it can be devastating for the environment, economy, and even affect human health.

APHIS, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service works around the clock, 7 days a week inspect incoming shipments to the U.S. for alien invaders. These aliens use every trick in the book to hitch a ride to a new land; some have been spotted for sale on the internet or been brought in as pets. Step 1 is to learn about potential alien invaders for your area. This project has been developed to help you spot aliens invasive species, and to help you to be on the lookout.

Preventing the introduction and establishment of invasive species in a new area is everyone's responsibility. And there are important, simple things that we should all be aware of:

- Invasive species can easily be transported on living plants or fresh produce such fruit and plants.
- Many pests can be found in recently killed plant material such as firewood, lumber, and wood packing materials. Avoid long-range movement of these materials to help slow the spread of invasive species.
- Purchase only certified pest-free nursery stock (like trees and shrubs) whenever possible.
- Avoid bringing alien species into your area at all costs! (APHIS, 2015)

Report any sightings of invasive species to your local Extension office.

Source: APHIS 2015 *Hungry Pests* Retrieved from <http://www.hungrypests.com/>

Recommended companion resources:



APHIS - Leave Hungry Pests Behind <http://www.hungrypests.com/>



Play, Clean, Go - Stop Invasive Species In Your Tracks <http://www.playcleango.org/>



Invasive and Exotic Species of North America

<http://www.invasive.org/>

1. **Learning / Inquiry Activities Sequence**

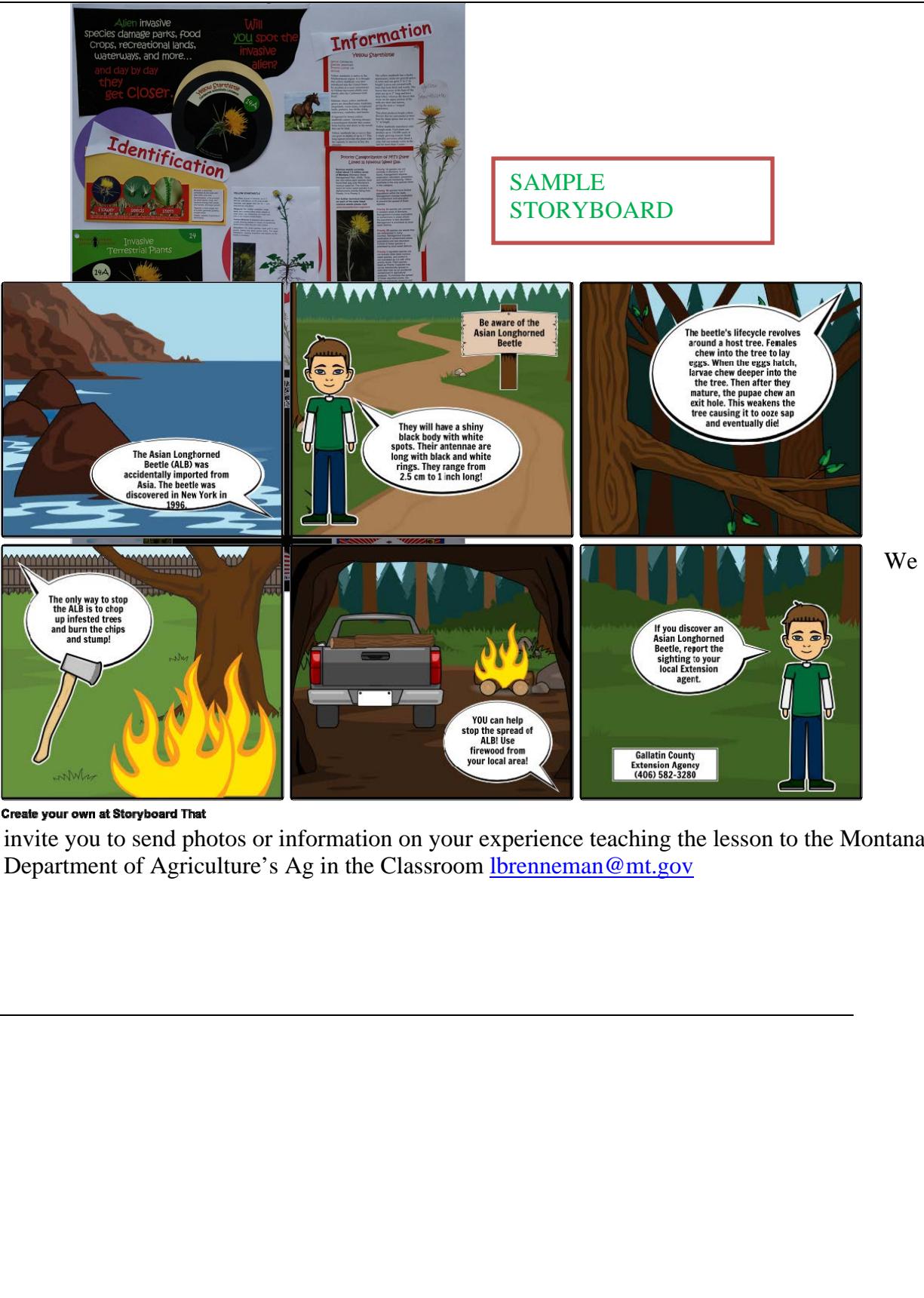
Provide each student with a tattoo of an invasive species. Several of the same tattoos are in each pack; students with the same tattoos will become a team. Tattoos are available by contacting lbrenneman@mt.gov or at our booth at MEA. In place of the invasive species tattoos you can also use the invasive print sheet at the end of the lesson and substitute photos

of the invasive species for tattoos to determine groups and subject matter.

2. Each student-team will research their invasive species and define the problem revolving around their species.
 - Tell the public about your invasive species (name, physical characteristics, diet, etc.).
 - How does your invasive species spread?
 - What impact does your invasive species have on the environment?
 - What methods are used to control your invasive species?
 - Who do you report sightings of your invasive species to?
3. Students will choose what type of PSA to create from the following 3 options.
 - Poster: See sample on next page
 - Video <https://www.youtube.com/watch?v=gW6clzybDgU> or <https://www.youtube.com/watch?v=R-DVwDfENxM>
 - Storyboard (Create online: <http://www.storyboardthat.com/storyboards/tag/psa/page2>)
 - See sample on next page:
<http://sbt.blob.core.windows.net/storyboards/misslammi/asian-longhorned-beetle.png>
4. Ask students to apply their tattoos. Students will present their PSA to their class, school, or community! **Send us your examples to share with Montana, we love photos and will post to our Facebook page, help educate Montanans about INVASIVES!**

For a detailed instructional sequence for PSA's, with graphic organizers for research notes and PSA development, please visit: <http://pestworldforkids.org/media/12600/lesson-psa.pdf>

PSA Rubric: http://www.scholastic.com/drive2life/pdf/NRSF_612_Rubric.pdf



Create your own at [Storyboard That](http://StoryboardThat.com)

invite you to send photos or information on your experience teaching the lesson to the Montana Department of Agriculture's Ag in the Classroom lbrenneman@mt.gov

Appendix 1



