

Module 3 ~ Why Manage Invasive Plants? (MS/HS)

Answer Key – Florida’s Aquatic Plant Story DVD Presentation



An introduction to the benefits of native plants & problems caused by invasive weeds.

Name: _____ Class Period: _____ Date: _____

Directions: As you watch the DVD about Florida’s aquatic plants, answer the following questions. Discuss each topic after watching the program.

1. What problems can develop when a lake is covered by water hyacinth?
 - a. **plants and animals start to die off**
 - b. **oxygen levels drop**
 - c. **increased sediments can make the lake more shallow over time**

2.
 - a. How long does it take for water hyacinth to double in size? **About 13 days**

 - b. Approximately how many days would it take water hyacinth to cover an 8-acre lake if you start with one acre of this invasive plant?
Approximately 39 days

 - c. Why does this particular plant grow so fast?
It has no natural predators in Florida.

3. List four benefits derived from native aquatic plants:
 - a. **Native plants are established parts of a food chain.**
 - b. **Native plants help to stabilize the shoreline of a water body.**
 - c. **Native plants provide habitat for other plants and animals.**
 - d. **Native plants help to take up the nutrients in the water.**

4. Describe two ways in which Florida lakes are different from lakes in other states.
 - a. **Florida lakes have a large amount of naturally occurring phosphorus.**
 - b. **Florida water bodies support a great diversity of plant and animal life.**

5. What does the term maintenance control mean as used in the program?

Maintenance control means to keep aquatic weeds at a minimum so they don’t become a larger, more expensive "crisis" problem.



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6. List three ways aquatic plants are controlled in Florida.

- a. **Chemical controls such as herbicides**
- b. **Physical plant removal**
- c. **Biological control**

7. What aquatic plant is the #1 weed problem in the state of Florida? hydrilla

Why? **Hydrilla is a top weed problem because of its reproduction process and rate; it has no natural predators; and it can grow in low light levels.**

8. How is the aquatic plant hydrilla being controlled in Florida waters?

Chinese grass carp have been imported and are being used as a biological control and herbicides are also being used.

9. List four things citizens can do to help control aquatic weeds in Florida’s lakes and rivers?

- a. **We can educate ourselves about the problems and solutions.**
- b. **We should be aware of and join community action groups (LAKEWATCH, etc.).**
- c. **When leaving a water body, we should clean the aquatic plants off vehicles, boats, equipment before leaving, so that the plants are not transported to a different water body.**
- d. **Never dump aquarium plants and/or animals into a Florida water body.**

10. Why is it important for citizens in your community to understand Florida’s aquatic ecosystems?

Discuss with class... many answers for this one



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The following is a list of suggested standards that pertain to this activity. This list is provided as a reference to incorporate and expand upon as needed.

Next Generation Sunshine State Standards

6th Grade

SC.6.E.6.1: Describe and give examples of ways in which Earth's surface is built up and torn down by physical and chemical weathering, erosion, and deposition.

7th Grade

SC.7.E.6.6: Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, changing the flow of water.

SC.7.L.15.3: Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.

SC.7.L.17.3: Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

SC.7.N.1.5: Describe the methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics.

8th Grade

SC.8.N.1.5: Analyze the methods used to develop a scientific explanation as seen in different fields of science.

SS.8.G.5.2: Describe the impact of human modifications on the physical environment and ecosystems of the United States throughout history.

9th - 12th Grades

SC.912.L.17.5: Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.

SC.912.L.17.8: Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

SC.912.L.17.13: Discuss the need for adequate monitoring of environmental parameters when making policy decisions.

SC.912.L.17.15: Discuss the effects of technology on environmental quality of innovative methods of protecting the environment.

SC.912.L.17.16: Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.

SS.912.G.5.3: Analyze case studies of the effects of human use of technology on the environment of places.

SS.912.G.5.4: Analyze case studies of how humans impact the diversity and productivity of ecosystems.



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Common Core State Standards .

6th Grade

Common Core Code	FL Common Core Code	Common Core Standard
RI.6.1	LAFS.6.RI.1.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
RI.6.7	LAFS.6.RI.3.7	Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.
W.6.2d	LAFS.6.W.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.
SL.6.1	LAFS.6.SL.1.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.
SL.6.1c	LAFS.6.SL.1.1c	Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.
SL.6.2	LAFS.6.SL.1.2	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
L.6.3	LAFS.6.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.6.4	LAFS.6.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.
L.6.4a	LAFS.6.L.3.4a	Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.
L.6.4b	LAFS.6.L.3.4b	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
L.6.6	LAFS.6.L.3.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
RST.6-8.4	LAFS.68.RST.2.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
WHST.6-8.2d	LAFS.68.WHST.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.

7th Grade

W.7.2d	LAFS.7.W.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.
SL.7.1	LAFS.7.SL.1.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others’ ideas and expressing their own clearly.
SL.7.1c	LAFS.7.SL.1.1c	Pose questions that elicit elaboration and respond to others’ questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.
L.7.3	LAFS.7.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.7.4	LAFS.7.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.
L.7.4a	LAFS.7.L.3.4a	Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.
L.7.4b	LAFS.7.L.3.4b	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., belligerent, bellicose, rebel).
L.7.6	LAFS.7.L.3.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
WHST.6-8.2d	LAFS.68.WHST.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.
WHST.6-8.4	LAFS.68.WHST.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
WHST.6-8.9	LAFS.68.WHST.3.9	Draw evidence from informational texts to support analysis reflection, and research.



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8th Grade

W.8.2d	LAFS.8.W.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.
W.8.9	LAFS.8.W.3.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
SL.8.1	LAFS.8.SL.1.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others’ ideas and expressing their own clearly.
SL.8.1c	LAFS.8.SL.1.1c	Pose questions that connect the ideas of several speakers and respond to others’ questions and comments with relevant evidence, observations, and ideas.
L.8.3	LAFS.8.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.8.4	LAFS.8.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.
L.8.4a	LAFS.8.L.3.4a	Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.
L.8.4b	LAFS.8.L.3.4b	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).
L.8.6	LAFS.8.L.3.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
RST.6-8.1	LAFS.68.RST.1.1	Cite specific textual evidence to support analysis of science and technical texts.
RST.6-8.4	LAFS.68.RST.2.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
WHST.6-8.2d	LAFS.68.WHST.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.

9th – 10th Grade

W.9-10.2d	LAFS.910.W.1.2d	Use precise language and domain-specific vocabulary to manage the complexity of the topic.
W.9-10.9	LAFS.910.W.3.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
SL.9-10.1	LAFS.910.SL.1.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.
SL.9-10.1c	LAFS.910.SL.1.1c	Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.
L.9-10.3	LAFS.910.L.2.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
L.9-10.4	LAFS.910.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.
L.9-10.4a	LAFS.910.L.3.4a	Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.
L.9-10.4b	LAFS.910.L.3.4b	Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy).
L.9-10.6	LAFS.910.L.3.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression
WHST.9-10.2d	LAFS.910.WHST.1.2d	Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.
WHST.9-10.4	LAFS.910.WHST.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
WHST.9-10.9	LAFS.910.WHST.3.9	Draw evidence from informational texts to support analysis, reflection, and research.



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11th – 12th Grade

W.11-12.2d	LAFS.1112.W.1.2d	Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.
SL.11-12.1	LAFS.1112.SL.1.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.
SL.11-12.1c	LAFS.1112.SL.1.1c	Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.
L.11-12.3	LAFS.1112.L.2.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
L.11-12.4	LAFS.1112.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11–12 reading and content, choosing flexibly from a range of strategies.
L.11-12.6	LAFS.1112.L.3.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.
RST.11-12.1	LAFS.1112.RST.1.1	Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
RST.11-12.4	LAFS.1112.RST.2.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.
WHST.11-12.2d	LAFS.1112.WHST.1.2d	Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
WHST.11-12.4	LAFS.1112.WHST.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
WHST.11-12.9	LAFS.1112.WHST.3.9	Draw evidence from informational texts to support analysis, reflection, and research.



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