

Understanding Invasive Aquatic Plants, Florida Edition

Next Generation Sunshine State and Florida Standards

A Collaboration the Florida Fish and Wildlife Conservation Commission / Invasive Plant Management Section <http://myfwc.com/>, the Aquatic Plant Management Society <http://www.apms.org/> and the UF/IFAS Center for Aquatic and Invasive Plants <http://plants.ifas.ufl.edu/education>



4th Grade

- SC.4.E.6.6: Identify resources available in Florida (water, phosphate, oil, limestone, silicon, wind, and solar energy).
- SC.4.L.16.1: Identify processes of sexual reproduction in flowering plants, including pollination, fertilization (seed production), seed dispersal, and germination.
- SC.4.N.1.4: Recognize ways plants and animals, including humans, can impact the environment.
- SS.4.A.4.1: Explain the effects of technological advances on Florida.
- SS.4.C.2.1: Discuss public issues in Florida that impact the daily lives of its citizens.
- SS.4.G.1.4: Interpret political and physical maps using map elements (title, compass rose, cardinal directions, intermediate directions, symbols, legend, scale, longitude, latitude).
- MA.4.A.6.4: Determine factors and multiples for specified whole numbers.
- MA.4.G.3.1: Describe and determine area as the number of same-sized units that cover a region in the plane, recognizing that a unit square is the standard unit for measuring area.

5th Grade

- SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.
- SS.5.G.4.1: Use geographic knowledge and skills when discussing current events.

6th Grade

- SS.6.G.1.4: Utilize tools geographers use to study the world.
- MA.6.A.3.6: Construct and analyze tables, graphs and equations to describe linear functions and other simple relations using both common language and algebraic notation.

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.17.2: Compare/ contrast the relationships among organisms such as mutualism, predation, parasitism, competition, commensalism.
- 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.
- SS.7.C.2.13: Examine multiple perspectives on public and current issues.
- SS.7.G.5.1: Use a choropleth or other map to geographically represent current information about issues of conservation or ecology in the local community.

8th Grade

- SC.8.N.4.1: Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.
- SC.8.N.4.2: Explain how political, social, and economic concerns can affect science, and vice versa.
- SS.8.A.1.2: Analyze charts, graphs, maps, photographs and timelines; analyze political cartoons; determine cause and effect.
- SS.8.G.2.3: Use geographic terms and tools to analyze case studies of how selected regions of the United States have changed over time.
- SS.8.G.5.1: Describe human dependence on physical environment and natural resources to satisfy basic needs in local environments in US.
- SS.8.G.5.2: Describe impact of human modifications on the physical environment and ecosystems of the United States throughout history.
- SS.8.G.6.1: Use appropriate maps and other graphic representations to analyze geographic problems and changes over time throughout American history.

9th - 12th Grades

- SC.912.E.7.8: Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively.
- SC.912.L.14.7: Relate the structure of each of the major plant organs and tissues to physiological processes.
- SC.912.L.14.53: Discuss basic classification and characteristics of plants. Identify bryophytes, pteridophytes, gymnosperms, and angiosperms.
- SC.912.L.17.1: Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.
- SC.912.L.17.2: Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature.
- 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.



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9th - 12th Grades continued

- SC.912.L.17.6: Compare /contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.
- 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.
- 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.
- SC.912.L.17.17: Assess the effectiveness of innovative methods of protecting the environment.
- SC.912.L.17.20: Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.
- SC.912.N.4.1: Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making.
- SC.912.N.4.2: Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental.
- SS.912.C.2.10: Monitor current public issues in Florida.
- 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.
- SS.912.G.5.5: Use geographic terms and tools to analyze case studies of policies and programs for resource use and management.
- SS.912.G.5.6: Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.
- SS.912.G.6.1: Use appropriate maps and other graphic representations to analyze geographic problems, changes over time.
- MA.912.A.2.2: Interpret a graph representing a real-world situation.

Common Core State Standards

4th Grade

Common Core Code	FL Common Core Code	Common Core Standard
RI.4.1	LAFS.4.RI.1.1	Refer to details and examples in a text when explaining what text says explicitly and when drawing inferences from text.
RI.4.4	LAFS.4.RI.2.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
RF.4.3	LAFS.4.RF.3.3	Know and apply grade-level phonics and word analysis skills in decoding words.
RF.4.3a	LAFS.4.RF.3.3a	Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.
RF.4.4	LAFS.4.RF.4.4	Read with sufficient accuracy and fluency to support comprehension.
RF.4.4a	LAFS.4.RF.4.4a	Read grade-level text with purpose and understanding.
RF.4.4c	LAFS.4.RF.4.4c	Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
L.4.3	LAFS.4.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.4.3a	LAFS.4.L.2.3a	Choose words and phrases to convey ideas precisely.
L.4.4	LAFS.4.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.
L.4.4a	LAFS.4.L.3.4a	Use context (e.g., definitions, examples, or restatements in text) as a clue to meaning of a word or phrase.

5th Grade

RI.5.4	LAFS.5.RI.2.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RF.5.3	LAFS.5.RF.3.3	Know and apply grade-level phonics and word analysis skills in decoding words.
RF.5.3a	LAFS.5.RF.3.3a	Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.
RF.5.4	LAFS.5.RF.4.4	Read with sufficient accuracy and fluency to support comprehension.
RF.5.4a	LAFS.5.RF.4.4a	Read grade-level text with purpose and understanding.
RF.5.4c	LAFS.5.RF.4.4c	Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
L.5.3	LAFS.5.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.



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L.5.4	LAFS.5.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.
L.5.4a	LAFS.5.L.3.4a	Use context (e.g., cause/effect relationships, comparisons in text) as a clue to meaning of a word or phrase.

6th Grade

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.6.4c	LAFS.6.L.3.4c	Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
L.6.4d	LAFS.6.L.3.4d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
RST.6-8.4	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 6–8 texts and topics.
RH.6-8.7	LAFS.68.RH.3.7	Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
WHST.6-8.9	LAFS.68.WHST.3.9	Draw evidence from informational texts to support analysis reflection, and research.

7th Grade

RI.7.4	LAFS.7.RI.2.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.
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.7.4d	LAFS.7.L.3.4d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
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.
RH.6-8.7	LAFS.68.RH.3.7	Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
WHST.6-8.9	LAFS.68.WHST.3.9	Draw evidence from informational texts to support analysis reflection, and research.

8th Grade

RI.8.4	LAFS.8.RI.2.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
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.8.4d	LAFS.8.L.3.4d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
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.
RH.6-8.7	LAFS.68.RH.3.7	Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
WHST.6-8.9	LAFS.68.WHST.3.9	Draw evidence from informational texts to support analysis reflection, and research.



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9 – 10th Grade

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.9-1.4a	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.9-10.4d	LAFS.910.L.3.4d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
RST.9-10.4	LAFS.910.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 9–10 texts and topics.
WHST.9-10.9	LAFS.910.WHST.3.9	Draw evidence from informational texts to support analysis, reflection, and research.

11 – 12th Grade

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.11-12.4a	LAFS.1112.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.11-12.4d	LAFS.1112.L.3.4d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
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.11-12.9	LAFS.1112.WHST.3.9	Draw evidence from informational texts to support analysis, reflection, and research.



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