

Module 1 ~ Silent Invaders (MS)

Answer Key – Observation Chart

Freshwater Plants Jigsaw Puzzle Activity (Step 3)

Purpose: Develop observation and data recording skills.



Directions: Once the puzzle is assembled, use your observation skills and magnifying lens to complete the following information in the table below.

- 1) Identify three plants (each) seen along the shoreline, in shallow water, open water, and underwater.
- 2) List the common and scientific name for each of your plants.
- 3) Write a brief description of obvious characteristics. Is it along the shoreline or in water? What is the leaf shape, flower shape, color?
- 4) Do you think it is emergent (E), floating-leaved (FL), free floating (FF) or submersed (S)? Record your answer.
- 5) Use **Freshwater Plants Jigsaw Puzzle – Plant List** to check your answers.
- 6) Now use the same Plant List to find out if the plant is **native**, **non-native** or **invasive** in Florida.

Common name	Scientific name	Brief Description	Aquatic Plant Category (E) (FL) (FF) (S)	Native (N) Non-native (NN) Invasive (I)
alligator weed	<i>Alternanthera philoxeroides</i>	shoreline; narrow lance or diamond shaped leaves; flower -white rounded ball	(E)	(NN, I)
American lotus	<i>Nelumbo lutea</i>	shallow water; floating circle shaped leaves; large yellow flower on stalk; large brown seed pod	(FL)	(N)
arrow arum	<i>Peltandra virginica</i>	shoreline; small arrowhead shaped leaves; white spiked flower	(E)	(N)
baby's-tears	<i>Micranthemum umbrosum</i>	underwater; tiny, round, light-green leaves	(S)	(N)
bacopa	<i>Bacopa</i> species	shoreline; shallow water; small oval leaves; small white flowers with rounded petals	(E, S)	(N)
banana lily	<i>Nymphoides aquatica</i>	water surface; floating rounded leaves with notch at base	(FL)	(N)
beakrush	<i>Rhynchospora</i> species	shoreline; thin strap-shaped leaf; flower on tip of stem	(E)	(N)
bladderwort	<i>Utricularia foliosa</i>	open water; greenish floating mat with tiny leaves and tiny white or yellow flowers	(S)	(N)
blue flag	<i>Iris virginica</i>	shoreline; leaves long and sword like; large purplish showy flower	(E)	(N)
bog buttons	<i>Lachnocaulon</i> species	shoreline; on land; cluster spikes; leaves grass-like, white button-like flower	(E)	(N)
bog moss	<i>Mayaca fluviatilis</i>	open water; long thin stem with short thread-like leaves	(S)	(N)
bulrush	<i>Scirpus</i> species	shoreline; shallow water; thick stalks with branched flower on tip of stalk	(E)	(N)
buttonbush	<i>Cephalanthus occidentalis</i>	upper shoreline; leaves rounded at base; tips pointed; flower - white fuzzy ball	(E)	(N)

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cat-tails	<i>Typha</i> species	shoreline; shallow water; large sword-shaped leaves; brown flower head	(E)	(N)
coastal arrowhead	<i>Sagittaria graminea</i>	shallow water; teardrop shaped leaves; flower whitish in clusters of four	(E)	(N)
common broadleaf arrowhead	<i>Sagittaria latifolia</i>	shoreline; large arrow shaped leaves; white cluster flowers	(E)	(N)
common reed	<i>Phragmites australis</i>	shoreline; long thick stems; leaves opposite; flower is fuzzy spikelet	(E)	(N)
coontail	<i>Ceratophyllum demersum</i>	open water; feathery fan-shaped leaves circle around the stem (in a whorl); stem and leaves resemble a raccoon tail	(S)	(N)
duck potato	<i>Sagittaria lancifolia</i>	shoreline; lance-shaped leaves; showy white flower with three petals	(E)	(N)
Eurasian water milfoil	<i>Myriophyllum spicatum</i>	open water; emersed; feathery branched leaves	(S)	(NN, I)
fanwort	<i>Cabomba caroliniana</i>	underwater; submersed fan-shaped leaves; stems and leaves resemble an evergreen tree branch	(S)	(N)
fire flag	<i>Thalia geniculata</i>	shoreline; shallow water; lance-shaped leaves; purplish flowers	(E)	(N)
flatsedge	<i>Cyperus odoratus</i>	upper shoreline; grass blade-like leaves; flower is a green spiky cluster	(E)	(N)
fragrant water lily	<i>Nymphaea odorata</i>	water surface; floating circular leaves with one notch; white showy flower with yellow center (on end of thin stem)	(FL)	(N)
frog's-bit	<i>Limnobium spongia</i>	shallow water; grows in clusters; green oval leaves floating on water and also sticking out of the water; thick stems	(E, FL)	(N)
giant cutgrass	<i>Zizaniopsis miliacea</i>	shoreline; large grassy, drooping branched spikelet	(E)	(N)
giant duckweed	<i>Spirodela polyrhiza</i>	water surface; dense floating mat; small rounded green leaves	(FF)	(N)
golden canna	<i>Canna flaccida</i>	shallow water; shoreline; large oblong leaves; pointed tips; showy yellow flowers	(E)	(N)
golden club	<i>Orontium aquaticum</i>	shallow water; large oblong leaves; tiny yellow flowers on tip of club-shaped stalk	(E)	(N)
hydrilla	<i>Hydrilla verticillata</i>	underwater; pointed leaflets that spiral around long stems (in a whorl)	(S)	(NN, I)
Illinois pondweed	<i>Potamogeton illinoensis</i>	open water; leaves on surface; oblong yellow-green pointed leaf; spike shaped flower sticking out of water	(S)	(N)
knotweed, smartweed	<i>Polygonum</i> species	shallow water; leaves are small lance shaped; flowers terminal pinkish or white spikes	(E)	(N)

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lizard's-tail	<i>Saururus cernuus</i>	shallow water; arrowhead shaped leaves on stalks; white fluffy flower covered spike	(E)	(N)
maidencane	<i>Panicum hemitomon</i>	shallow water; flat long leaf; pointed at tip	(E)	(N)
marsh beggar-tick	<i>Bidens mitis</i>	upper shoreline; teardrop-shaped leaves; slender tips; bright yellow flower	(E)	(N)
muskgrass	<i>Chara</i> species	shallow water or open water; an algae with feathery “branches” that appear on surface and underwater	(S)	(N)
napier grass (elephant grass)	<i>Pennisetum purpureum</i>	shoreline; cylindrical flower head, leaves long strap-like	(E)	(NN, I)
parrot feather	<i>Myriophyllum aquaticum</i>	Shoreline; shallow water; feathery dark green leaves whorl around stem which sticks out of the water	(S)	(NN)
pickerelweed	<i>Pontederia cordata</i>	shoreline; shallow water; lance-shaped rounded leaves; purple spike flower	(E)	(N)
red ludwigia	<i>Ludwigia repens</i>	underwater; dark green to dark red teardrop shaped leaves; leaves are opposite	(E, S)	(N)
redroot	<i>Lachnanthes caroliniana</i>	shallow water; fan-like clump; sword-like leaves; white cluster flower	(E)	(N)
road-grass	<i>Eleocharis baldwinii</i>	shallow water; thin spikes with brown spikelet on tip of stem	(E)	(N)
rush fuirena	<i>Fuirena scirpoidea</i>	upper shoreline; spiky with three oval spikelet at the tip of stem	(E)	(N)
sago pondweed	<i>Potamogeton pectinatus</i>	underwater; grass-like leaves float on surface in greenish mat; multiple long, slender and flexible stems; stems have many branches	(S)	(N)
salvinia	<i>Salvinia</i> species	water surface; floating small circular leaves; clusters	(FF)	(NN)
saw-grass	<i>Cladium jamaicense</i>	shoreline; long narrow spiked leaves; flower on end of spike	(E)	(N)
small duckweed	<i>Lemna valdiviana</i>	water surface; tiny greenish floating plant	(FF)	(N)
soft rush	<i>Juncus effusus</i>	shallow water; grows in clumps; spiky with yellow flower on tip of stem	(E)	(N)
southern naiad	<i>Najas guadalupensis</i>	underwater; slender long branched-stem; small narrow leaves	(S)	(N)
spatterdock, cow lily	<i>Nuphar advena (luteum)</i>	water surface; large heart-shaped leaves with wavy edges; yellow globe-shaped flowers supported by thick stem; flowers only half-open	(FL)	(N)
star-rush	<i>Dichromena</i> species	shoreline; spiky blades; white star shaped flower on end of spiky blade	(E)	(N)

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swamp lily	<i>Crinum americanum</i>	upper shoreline; long grass-like shaped leaves; white showy flower on end of stalk	(E)	(N)
tape grass	<i>Vallisneria americana</i>	underwater; long ribbon-like leaves in clusters; leaves have rounded tips	(S)	(N)
water grass	<i>Luziola fluitans</i>	shallow water; grassy floating mat; tiny white flowers	(E)	(N)
(spotted) water hemlock	<i>Cicuta maculata</i>	upper shoreline; leaflets are teardrop shaped and jagged on the edge; tiny white flowers in an umbrella shape	(E)	(N)
water hyacinth	<i>Eichhornia crassipes</i>	shoreline and shallow water; rounded thick leaves attached to stalks; purple showy flower	(FF)	(NN, I)
water lettuce	<i>Pistia stratiotes</i>	water surface; looks like an open head of lettuce; ridged leaves	(FF)	(NN, I)
water pennywort	<i>Hydrocotyle</i> species	shallow water; small circular leaves attached to stem like an umbrella	(E, FL)	(N)
water primrose	<i>Ludwigia alternifolia</i>	shoreline and shallow water; small circular leaves attached to stem like an umbrella	(E)	(N)
water shield	<i>Brasenia schreberi</i>	shoreline; heart-shaped leaves; yellow flower with four petals; branched stem	(FL)	(N)
wild taro	<i>Colocasia esculenta</i>	water surface; floating mat of oval shield shaped leaves	(E)	(NN, I)
wild-rice	<i>Zizania aquatica</i>	shoreline; large arrowhead-shaped leaves	(E)	(N)
yellow water lily	<i>Nymphaea mexicana</i>	shoreline; shallow water; tall stalk with lower branches drooping	(FL)	(N)

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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.6.4	LAFS.6.RI.2.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.
W.6.2d	LAFS.6.W.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.
W.6.4	LAFS.6.W.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
W.6.9	LAFS.6.W.3.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
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.6.1d	LAFS.6.SL.1.1d	Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
L.6.1	LAFS.6.L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
L.6.2	LAFS.6.L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
L.6.3	LAFS.6.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.6.3a	LAFS.6.L.2.3a	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.
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., overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to 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).
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.
RST.6-8.7	LAFS.68.RST.3.7	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
RST.6-8.10	LAFS.68.RST.4.10	By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.
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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7th Grade

RI.7.1	LAFS.7.RI.1.1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
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.
W.7.2d	LAFS.7.W.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.
W.7.4	LAFS.7.W.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
W.7.9	LAFS.7.W.3.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
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.7.1d	LAFS.7.SL.1.1d	Acknowledge new information expressed by others and, when warranted, modify their own views.
L.7.1	LAFS.7.L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
L.7.2	LAFS.7.L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
L.7.3	LAFS.7.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.7.3a	LAFS.7.L.2.3a	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.
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., overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to 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).
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.
RST.6-8.7	LAFS.68.RST.3.7	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
RST.6-8.10	LAFS.68.RST.4.10	By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.
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

RI.8.1	LAFS.8.RI.1.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
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.
W.8.2d	LAFS.8.W.1.2d	Use precise language and domain-specific vocabulary to inform about or explain the topic.
W.8.4	LAFS.8.W.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
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.8.1d	LAFS.8.SL.1.1d	Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.
L.8.1	LAFS.8.L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
L.8.2	LAFS.8.L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
L.8.3	LAFS.8.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
L.8.3a	LAFS.8.L.2.3a	Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact).
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).
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.
RST.6-8.7	LAFS.68.RST.3.7	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
RST.6-8.10	LAFS.68.RST.4.10	By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.
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.