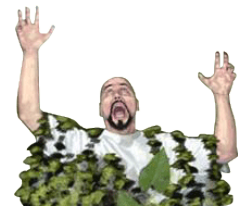


Module 1 ~ Silent Invaders (UE/MS)

Emerged Plants Reading Activity



Name: _____ Class Period: _____ Date: _____

EMERSED PLANTS are rooted to the _____ sediments, but their stems, leaves and flowers are above the water. Bulrush, _____, and duck potato are examples of _____ plants. Emersed plants grow in or _____ the edge of a waterbody and they perform many functions. They provide _____ for fish; as well as _____ (seeds and leaves) and _____ for other wildlife such as birds, ducks, frogs, and raccoons. Emersed plants also help to reduce shoreline _____.

Word bank

above bottom cat-tail emersed
erosion food habitat near shelter

For more information on emerged plants:

<http://plants.ifas.ufl.edu/guide/emepla.html>

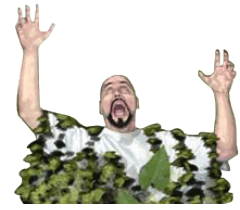
<http://plants.ifas.ufl.edu/scical.html>

<http://plants.ifas.ufl.edu/node/459>

<http://plants.ifas.ufl.edu/node/388>

Module 1 ~ Silent Invaders (UE/MS)

Emerged Plants Reading Activity – Answer Key



Name: _____ Class Period: _____ Date: _____

EMERSED PLANTS are rooted to the bottom sediments, but their stems, leaves and flowers are above the water. Bulrush, cat-tail, and duck potato are examples of emersed plants. Emersed plants grow in or near the edge of a waterbody and they perform many functions. They provide shelter for fish; as well as food (seeds and leaves) and habitat for other wildlife such as birds, ducks, frogs, and raccoons. Emersed plants also help to reduce shoreline erosion.

Word bank

above bottom cat-tail emersed
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Module 1 ~ Silent Invaders (UE/MS)

Emerald Plants Reading Activity – Answer Key



Sunshine State Standards

Note: Standards listed in *italics* are touched on briefly and can be more fully developed by the teacher.

4th Grade

- LA.4.1.5.1: TSW demonstrate the ability to read grade level text.
- LA.4.1.6.1: TSW use vocabulary that is introduced and taught directly.
- LA.4.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.
- LA.4.1.6.3: TSW use context clues to determine meanings of unfamiliar words.
- LA.4.1.7.3: TSW determine explicit ideas and information in grade-level text, including but not limited to main idea, relevant supporting details, implied message, inferences, chronological order of events, summarizing, and paraphrasing.
- SC.4.N.1.4: TSW recognize ways plants and animals, including humans, can impact the environment.

5th Grade

- LA.5.1.5.1: TSW demonstrate the ability to read grade level text.
- LA.5.1.6.1: TSW use vocabulary that is introduced and taught directly.
- LA.5.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.
- LA.5.1.6.3: TSW use context clues to determine meanings of unfamiliar words.
- LA.5.1.7.3: TSW determine the main idea or essential message in grade-level text through inferring, paraphrasing, summarizing, and identifying relevant details.
- SC.5.L.17.1: TSW 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.

6th Grade

- LA.6.1.6.1: TSW use vocabulary that is introduced and taught directly.
- LA.6.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.
- LA.6.1.6.3: TSW use context clues to determine meanings of unfamiliar words.
- LA.6.1.7.3: TSW determine the main idea or essential message in grade-level text through inferring, paraphrasing, summarizing, and identifying relevant details.
- SC.6.L.15.1: TSW analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

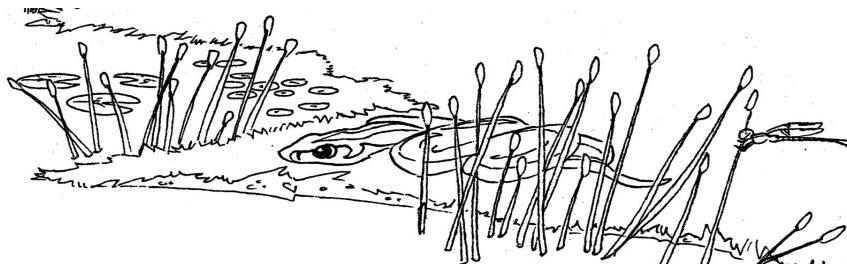
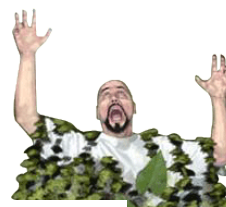
7th Grade

- LA.7.1.6.1: TSW use new vocabulary that is introduced and taught directly.
- LA.7.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.
- LA.7.1.6.3: TSW determine the main idea or essential message in grade-level or higher texts through inferring, paraphrasing, summarizing, and identifying relevant details.
- LA.7.1.7.3: TSW use context clues to determine meanings of unfamiliar words.
- SC.7.L.17.1: *TSW explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.*

8th Grade

- LA.8.1.6.1: TSW use new vocabulary that is introduced and taught directly.
- LA.8.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.
- LA.8.1.6.3: TSW use context clues to determine meanings of unfamiliar words.
- LA.8.1.7.3: TSW determine the main idea or essential message in grade-level or higher texts through inferring, paraphrasing, summarizing, and identifying relevant details.

Module 1 ~ Silent Invaders (MS/HS) Emerged Plant Reading Activity



Emerged plants are aquatic plants that grow out of the water; they occur naturally in all Florida waterbodies. They are rooted to the lake bottom sediment, but their stems, leaves and flowers are above the water. Bulrush, cat-tail, maidencane, and pickerelweed are a few examples of emerged plants. Emerged plants grow in water-saturated and/or submersed soils near the edge of a water body. They grow out from the lake's edge to a maximum water depth from 1 to 3 meters (about 3 to 10 feet). The width of the emerged zone (from the shoreline out into the lake) may vary from a few feet to hundreds of feet. Its size changes most often in response to changing water levels.

Emerged plants perform many functions. They provide habitat and food (seeds and leaves) for fish and wildlife populations, as well as help to reduce shoreline erosion. An abundance of emerged plants can also increase evapotranspiration (water loss) from a water body, sometimes to the point where water levels are lowered.

Emerged plant communities change in various ways along with fluctuating water levels. When periods of low water are followed by a rapid rise in water level, large sections of emerged plants may be uprooted. Uprooted plants can form floating islands called tussocks that can be significant navigational hazards and block access to parts of the water body. It should be noted tussocks also provide bird and wildlife habitat. Sustained high water can also reduce emerged plant abundance. In periods of low water, leaves and other plant debris from emerged plants can accumulate significantly and eventually cause the lake to become shallower, forming a swamp or marsh, and ultimately, peat deposits.

The measurement of average emerged plant biomass in a water body is one of several measurements that can be used to assess a water body's overall biological productivity. Plant biomass measurements can be calculated by finding the average weight of fresh, live emergent aquatic plants growing in one square meter of a lake's bottom area.

An emerged plant is different from submersed plants because the plants' roots are anchored in the _____, and its _____, _____ and flowers usually grow _____ the water. In Florida, some of the more common emerged plants found in a lake or pond are cattail, _____, pickerelweed, and _____. Some plants, such as the frog's bit (*Limnobium spongia*), can be classified as a floating plant in some instances and _____ plants at other times.

Emerged plants grow in water that is as shallow as a few centimeters (inches) to as deep as three meters (that's _____ feet!). During drought or low water, emerged plants are still considered "emerged," even when there is no _____ in the lake.

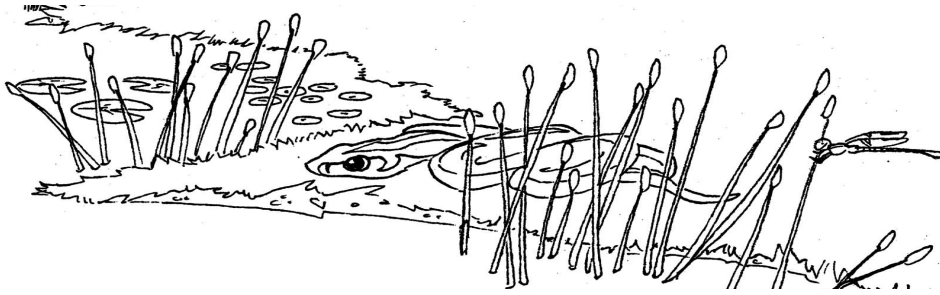
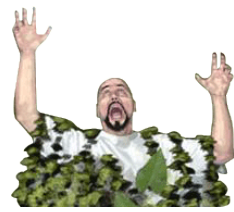
Emerged plants provide many functions in a freshwater lake or pond including providing food and _____ for fish and wildlife. For example, fish and wildlife depend on rotting _____ and as sources of food. Emerged plants also provide an important service by providing a buffer from wave action and help to prevent shoreline _____.

Emerged plant biomass is just one measure of the lake's _____. Other measurements such as _____ or _____ might also be used.



Module 1 ~ Silent Invaders (MS/HS)

Emerged Plant Reading Activity – Answer Key



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Emerged plant communities change in various ways along with fluctuating water levels. When periods of low water are followed by a rapid rise in water level, large sections of emerged plants may be uprooted. Uprooted plants can form floating islands called tussocks that can be significant navigational hazards and block access to parts of the water body. It should be noted tussocks also provide bird and wildlife habitat. Sustained high water can also reduce emerged plant abundance. In periods of low water, leaves and other plant debris from emerged plants can accumulate significantly and eventually cause the lake to become shallower, forming a swamp or marsh, and ultimately, peat deposits.

The measurement of average emerged plant biomass in a water body is one of several measurements that can be used to assess a water body's overall biological productivity. Plant biomass measurements can be calculated by finding the average weight of fresh, live emergent aquatic plants growing in one square meter of a lake's bottom area.

An emerged plant is different from submersed plants because the plants' roots are anchored in the sediment, and its leaves, stems and flowers usually grow above the water. In Florida, some of the more common emerged plants found in a lake or pond are cattail, bulrush, pickerelweed, and maidencane. Some plants, such as the frog's bit (*Limnobium spongia*), can be classified as a floating plant in some instances and emerged plants at other times.

Emerged plants grow in water that is as shallow as a few centimeters (inches) to as deep as three meters (that's 10 feet!). During drought or low water, emerged plants are still considered "emerged," even when there is no water in the lake.

Emerged plants provide many functions in a freshwater lake or pond including providing food and shelter for fish and wildlife. For example, fish and wildlife depend on rotting leaves and berries as sources of food. Emerged plants also provide an important service by providing a buffer from wave action and help to prevent shoreline erosion.

Emerged plant biomass is just one measure of the lake's biological productivity. Other measurements such as chlorophyll (algae) and submersed plant biomass might also be used.

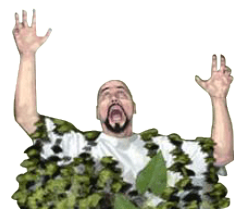


IFAS Extension
Center for Aquatic
and Invasive Plants



Module 1 ~ Silent Invaders (MS/HS)

Emerald Plant Reading Activity – Answer Key



Sunshine State Standards

Note: Standards in *italics* are touched on briefly and can be more fully developed by the teacher.

6th Grade

LA.6.1.6.1: TSW use vocabulary that is introduced and taught directly.

LA.6.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.

LA.6.1.6.3: TSW use context clues to determine meanings of unfamiliar words.

LA.6.2.2.2: TSW use information from the text to answer questions related to the main idea or relevant details, maintaining chronological or logical order.

SC.6.E.6.1: TSW 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.

SC.6.L.15.1: TSW analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

7th Grade

LA.7.1.6.1: TSW use new vocabulary that is introduced and taught directly.

LA.7.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.

LA.7.1.6.3: TSW use context clues to determine meanings of unfamiliar words.

LA.7.2.2.2: TSW use information from the text to state the main idea and/or provide relevant details.

SC.7.L.17.1: TSW explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

8th Grade

LA.8.1.6.1: TSW use new vocabulary that is introduced and taught directly.

LA.8.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.

LA.8.1.6.3: TSW use context clues to determine meanings of unfamiliar words.

LA.8.2.2.2: TSW synthesize and use information from the text to state the main idea or provide relevant details.

9th - 12th Grades

LA.910.1.6.1: TSW use new vocabulary that is introduced and taught directly.

LA.1112.1.6.1: TSW use new vocabulary that is introduced and taught directly.

LA.910.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.

LA.1112.1.6.2: TSW listen to, read, and discuss familiar and conceptually challenging text.

LA.910.1.6.3: TSW use context clues to determine meanings of unfamiliar words.

LA.1112.1.6.3: TSW use context clues to determine meanings of unfamiliar words.

LA.910.2.2.2: TSW use information from the text to answer questions or to state the main idea or provide relevant details.

LA.1112.2.2.2: TSW use information from the text to answer questions or to state the main idea or provide relevant details.

SC.912.L.14.53: TSW discuss basic classification and characteristics of plants. Identify bryophytes, pteridophytes, gymnosperms, and angiosperms.

SC.912.L.17.2: TSW explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature.

SC.912.L.17.9: TSW use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.

