Manatee/Florida Spring Diorama

Grade Level: 2-3

Subject Area: Science, Art

Duration: Teach: 15 minutes, Research: 2 hours, Activity: take home project, Presentation: 5 minutes, Classroom Wrap-up Discussion: 10 minutes

Setting: Classroom or Home

Next Generation State Standards:
Science
Grade 2
Body of Knowledge Earth Space SC.2.E
SC.2.6E Earth Structures
SC.2.E.7 Earth Systems and Patterns
Body of Knowledge Life Science SC.2.L
SC.2.L.14 Organization and Development of Living Organisms
SC.2.L.17 Interdependence
Body of Knowledge Nature of Science SC.2.N
SC.2.N.1 Practice of Science
Grade 3
Body of Knowledge Earth Space- SC.3.E
SC.3.E.6 Earth Structures
Body of Knowledge Life Science- SC.3.L.
SC.3.L.14 Organization and Development of Living Organisms
SC.3.L.15 Diversity and Evolution of Living Organisms
SC.3.L.17 Interdependence

Visual Arts
Grade 2
Big Idea VA.2.C Critical Thinking and Reflection
Enduring Understanding 1 VA.2.C.1
Enduring Understanding 2 VA.2.C.2
Enduring Understanding 3 VA.2.C.3
Big Idea VA.2.S Skills, Techniques, and Processes
Enduring Understanding 2 VA.2.S.2

Visual Arts
Grade 3
Big Idea VA.3.C Critical Thinking and Reflection
Enduring Understanding 1 VA.3.C.1
Enduring Understanding 2 VA.3.C.2
Enduring Understanding 3 VA.3.C.3
Big Idea VA.3.S Skills, Techniques, and Processes
Enduring Understanding 3 VA.3.S.2

Statewide Science Assessment Prompt: What needs to be in a habitat for a manatee to live there?

Objectives: To showcase knowledge on manatees and Florida spring environments.

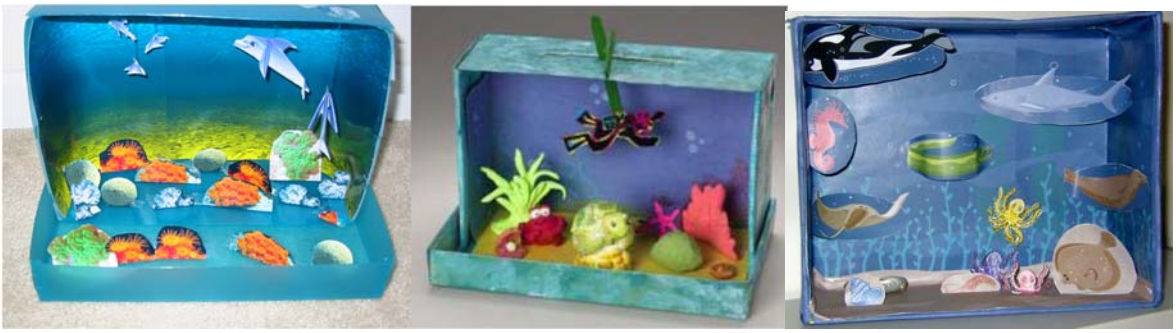
Students will demonstrate an understanding of what a manatee needs in a spring habitat, including proper food, shelter, space, and water temperature. Students will also learn that a diorama is a 3D recreation of organisms in their habitat.

Materials: Construction paper, glue, shoeboxes, scissors, old magazines, markers, old wrapping paper, moss, string, blue cellophane, sand, green yarn or string, other craft materials useful in recreating a spring habitat.

Vocabulary: adaptation, carnivore, community, conservation, consumer, decomposer, density, ecosystem, endangered species, energy, energy pyramid, environment, food chain, habitat, heat, herbivore, life cycle, light, liquid, organism, photosynthesis, pollution, population, predator, prey, producer, water cycle

Background/Preparation: See Volusia County's manatee website (http://www.volusiamanatees.org) and http://www.floridagovernorsmansion.com/lesson/manatee_teaching_plan.pdf for basic background information and resource lists.
These will help you to be sure your students understand the needs of all animals to survive in their respective environments.

Suggestions on Ocean/ Sea Life Diorama Construction:
http://www.mckinneyisd.net/campuses/school_websites/walker/Library/Project_ideas.htm
http://www.enchantedlearning.com/crafts/Oceandiorama.shtml
http://www.wasd.k12.pa.us/schools/hooverville/WebSites/Grade%201/Ocean%20Webquest/Deb_Stine_Ocean_WQ/student/student_page.htm
http://www.scholastic.com/schoolage/activities/k_2/deepsea.htm



Teach/Activities: Students can work in pairs to construct a diorama in a shoebox, or construct the diorama as a take home project. Students should highlight plant and animal species present in a spring environment, and examples of factors that effect survival in the environment (energy source, food source, pollution, human interaction). Students will then give a 5-minute oral presentation explaining their diorama.

Assess: - Use a rubric to evaluate the diorama presentation. Students must include at least one of each:
Food supply –a native plant (such as water lettuce or alligator weed) and a non-native plant (such as hydrilla or water hyacinth)
Animals sharing the environment with the manatee –a native animal (such as an otter or an alligator), and a non-native animal (such as tilapia or armored catfish).

Extension: Show a video on manatees in their habitats: FWC-"The State of Manatees" http://www.savethemanatee.org/video.htm
http://www.crystalriverflorida.com/downloads/manatee/
http://www3.nationalgeographic.com/animals/video/manatee_detection.html
Visit www.volusia.org/environmental for more information.

Created by Kathy Wood. Adapted by Alexa Bracht, Georgia Zern, Louise Chapman.

Example Pictures (to use as cut-outs)

<u>Examples of Native Plants</u>

Water lettuce

Alligator weed

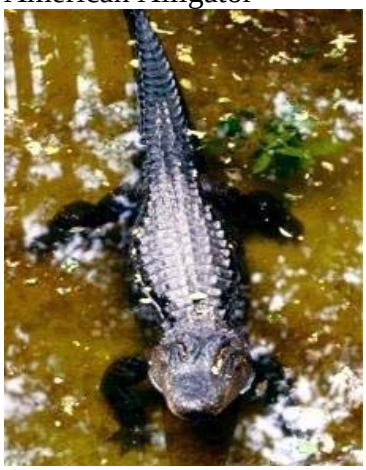
Examples of Non- Native Plants

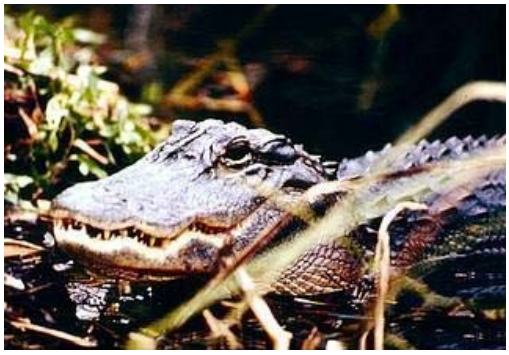
Hydrilla

Water hyacinth

Examples of Native Animals

American Alligator



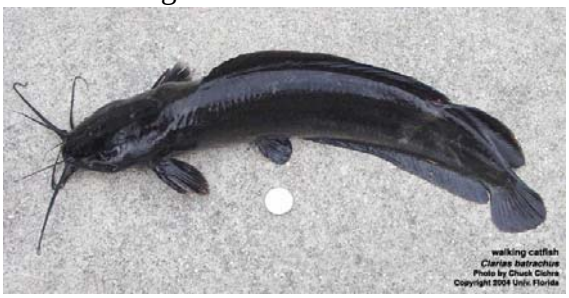


Florida manatee

Examples of Non-native Animals

Armored catfish

Walking catfish



Spotted tilapia

Created by Alexa Bracht, and Kathy Wood. Adapted by Georgia Zern.

Vocabulary

adaptation: A characteristic of an organism that increases its chance of survival in its environment
carnivore: An animal or plant that consumes or obtains nutrients from animals
community: All the populations of organisms belonging to different species and sharing the same geographical area
conservation: Controlled use and/or maintenance of natural resources; various efforts to preserve or protect natural resources
consumer: An organism that feeds on other organisms for food
decomposer: Any organism that feeds or obtains nutrients by breaking down organic matter from dead organisms
density: Concentration of matter of an object; number of individuals in the same species that live in a given area; the mass per unit volume of a substance in a given area
ecosystem: An integrated unit of a biological community, its physical environment, and interactions
endangered species: A species of plant or animal of which numbers are decreasing at an alarming rate and is threatened with extinction by human-made or natural changes in the environment.
energy: A quantity that describes the capacity to do work; a source of usable power
energy pyramid: A pyramidal diagram that compares the amount of energy available at each position, or level, in the feeding order
environment: The sum of conditions affecting an organism, including all living and nonliving things in an area, such as plants, animals, water, soil, weather, landforms, and air
food chain: Transfer of energy through various stages as a result of feeding patterns of a series of organisms
habitat: A place in an ecosystem where an organism normally lives
heat: A form of energy resulting from the temperature difference between a system and its surroundings
herbivore: An animal that feeds on plants
life cycle: The entire sequence of events in an organism's growth and development
light: Electromagnetic radiation that lies within the visible range
liquid: One of the fundamental states of matter with a definite volume but no definite shape
organism: Any living plant, animal, or fungus that maintains various vital processes necessary for life
photosynthesis: A chemical process by which plants trap light energy to convert carbon dioxide and water into carbohydrates (sugars)
pollution: Any alteration of the natural environment producing a condition harmful to living organisms; may occur naturally or as a result of human activities
population: A group of organisms of the same species living in a specific geographical area
predator: An organism that preys on and consumes animals; usually an animal
prey: An organism caught or hunted for food by another organism
producer: An organism that makes its own food from the environment; usually a green plant
water cycle: The path water takes as it is being cycled through the environment, including condensation, evaporation, and precipitation