



School Program Name: Coastal Investigations
Name of Sanctuary: North River Wildlife Sanctuary
Grade Level: 3-5
Location Options: Duxbury Beach, Duxbury MA
Time: 2 hours
For more info: southshore@massaudubon.org or
781-837-9400

Program Description

Salt, sand, and weather extremes can make for a challenging life along the coastline. Come learn how plants and animals have adapted to survive in such a dynamic habitat. Explore the mud flats for crabs, mollusks, and other marine organisms. Learn about the erosive forces that threaten our coastlines and why the protection of salt marshes is so important.

Massachusetts Curriculum Frameworks

Framework: Science and Technology
Strand: Life Science
Topic: Characteristics of Plants and Animals
Adaptations of Living Things

Learning Standards

Characteristics of Plants and Animals

3-5 Life Science #1: Classify plants and animals according to the physical characteristics that they share.

Adaptations of Living Things

3-5 Life Science #7: Give examples of how changes in the environment (drought, cold) have caused some plants and animals to die or move to new locations (migration).

3-5 Life Science #8: Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment. Recognize that some animal behaviors are instinctive (e.g., turtles burying their eggs), and others are learned (e.g., humans building fires for warmth, chimpanzees learning how to use tools).

Massachusetts Curriculum Frameworks

Framework: Science and Technology
Strand: Earth Science
Topic: Earth's History



Learning Standards

Earth's History

3-5 Earth Science #12: Give examples of how the surface of the earth changes due to slow processes such as erosion and weathering, and rapid processes such as landslides, volcanic eruptions, and earthquakes.

Massachusetts Curriculum Frameworks

Framework: English Language Arts
Strand: Language
Topic: Questioning, Listening, and Contributing

Learning Standards

Questioning, Listening, and Contributing

PreK-12 Language #2: Students will pose questions, listen to the ideas of others, and contribute their own information or ideas in group discussions or interviews in order to acquire new knowledge.

Lesson Objectives

What will students know and be able to do? These objectives must be observable and measurable.

Students will know and be able to:

- Give examples of marine animal adaptations.
- Explain three reasons why the protection of salt marshes is so important.

Vocabulary

Adaptation

Barrier Beach

Carapace

Crustacean

Filter feeder

Mollusk

Molt

Mudflat

Operculum



Plankton

Radula

Salt marsh

Shell

Tide

Wrack line

Assessments

How will you know that the students have met the standards?

- Mass Audubon Educator will observe students exploring, observing, and identifying marine organisms.
- Students will participate in answering Mass Audubon Educator-prompted questions about how organisms meet their needs in a coastal habitat.
- Students will work cooperatively to discuss how erosion threatens the coastline.

Summarizer

How will the Mass Audubon Educator close the lesson to see if students met the objectives?

- Through a teacher led discussion, students will identify a marine organism and explain one way it has adapted to its environment.
- Students will demonstrate an understanding of the importance of salt marshes by acting out reasons to protect it.



Mass Audubon School Programs

At Mass Audubon we strive to create learning experiences that are enriching, innovative, meaningful, and engaging. All our school programs are aligned with Massachusetts Curriculum Frameworks. Our network of wildlife sanctuaries and nature centers located in urban, suburban, and rural communities around the state enable us to have strong relationships with local schools.

Our Education Foundations

- Place-based education is an educational philosophy that connects learning to what is local for an individual. We help build conservation communities, working with students and teachers in cities and towns to develop place-based environmental education that is linked directly to their home community.
 - Inquiry-based learning is focused on teamwork, being learner-centered, questioning ourselves and the world around us, providing a more focused, time-intensive exploration, promoting lifelong learning, communication, and learning as fun.
 - We are fully committed to creating a positive and supportive environment for all learners.
 - We strive to be culturally sensitive, recognizing and embracing cultural differences.
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Differentiated Instruction

- We strive to create a positive learning environment that is inclusive, supportive to all learners, and sensitive to cultural diversity.
 - Outdoor classroom experiences are structured to meet the needs of the particular learners.
 - Students work in small groups using hands-on materials.
 - A variety of educational media are used, including colorful illustrations.
 - With advance notice, efforts will be made to accommodate all learning styles and physical needs.
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Notes

- Nature exploration is dependent upon the weather and other conditions. A class might observe different wildlife than they expected to see. An outdoor lesson can sometimes provide unexpected, but enriching teachable moments on a natural history topic that was not planned.
- Mass Audubon nature centers each have a unique landscape and will customize programs to work best at their particular site.
- Our lessons can be adapted to incorporate a classroom teacher's needs.

