COASTAL MAINE BOTANICAL GARDENS

BIRDS AT THE GARDENS

Unit Overview: Students will be introduced to inland and coastal birds of Maine and their adaptations. Students will study bird calls and mnemonics to recall them. Through exploration and observation of two habitats, students will begin to think about biodiversity. Students will answer essential questions and be introduced to scientific explanation.

Grade Levels: K-6

Desired Results

Standard: K-LS1 From Molecules to Organisms: Structures and Processes

- LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

Standard: K-ESS2 Earth's Systems

- K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

Standard: K-ESS3 Earth and Human Activity

- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

Standard: 1-LS1 From Molecules to Organisms: Structures and Processes

- 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Standard: 2-LS2 Ecosystems: Interactions, Energy, and Dynamics

- 2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Standard: 2-LS4 Biological Evolution: Unity and Diversity

- 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

Standard: 3-LS2 Ecosystems: Interactions, Energy, and Dynamics

- 3-LS2-1. Construct an argument that some animals form groups that help members survive.

Standard: 3-LS4 Biological Evolution: Unity and Diversity

- 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

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Standard: 4-LS1 From Molecules to Organisms: Structures and Processes

- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Standard: 5-LS2 Ecosystems: Interactions, Energy, and Dynamics

- 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Standard: MS-LS1 From Molecules to Organisms: Structures and Processes

- MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

Standard: MS-LS2 Ecosystems: Interactions, Energy, and Dynamics

- MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Understanding(s):	**Essential Question(s):**
Students will understand that... • Birds have parts that help them survive. • Birds adapt to places where they can find food and shelter. • Birds use sounds for many reasons. • Birds share their space with other living things.	• What parts help birds survive? • What birds live at Coastal Maine Botanical Gardens and why? • What sounds do birds make and why? • What other plants or animals live where the birds live?
Students will know...	**Students will be able to…**
• Different parts of birds that help them survive. • Habitats of birds that provide food and shelter. • Sounds birds make and ways to remember them. • What other things share space with the birds.	• Talk about adaptations of birds and identify some of these adaptations. • Identify a forest and tidal river habitat. • Make bird calls and identify bird calls in the field. • Talk about the ecosystem of which birds are a part of by comparing two habitats.

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Assessment Evidence	
Performance Tasks: • Learn the adaptations of birds and be able to describe some of them. • Learn the bird calls of 6-8 birds and reproduce those sounds using mnemonic devices. • Go on an exploratory walk in the Gardens, visiting the forest and tidal river habitats to count the number of different birds in each habitat. Make a claim and show evidence based on reasoning on which habitat has more birds and why.	**Other Evidence:** • Vocabulary activities • Oral/and or written responses to the Essential Question worksheet • Bird calls work sheet • Map of Gardens with observations of birds in two habitats • Claim, evidence, reasoning worksheet • Drawing of a bird and its parts • Drawing of a bird in a habitat

Learning Plan
Learning Activities: • Look at pictures of birds and discuss the adaptations of birds such as beaks, feathers, feet, hard-shelled eggs and hollow bones. • Do vocabulary activities to learn the key vocabulary. • Listen to bird sounds and use mnemonic devices to reproduce them. • Go on an exploratory walk. Explore two different habitats. Listen for bird calls and try to identify birds in the field. Look at what other living things share the habitat. • Return to the Education Center and look at the essential questions. • Review the essential questions with the group. • Draw a bird and label its parts. • Create a unique bird call and say what it is used for. Teach others the call and practice it. • Illustrate a sentence about a habitat.