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Amazing Animals

Grades 1 & 2 Program Suggestions

Our first and second grade naturalist programs are all about investigating animal adaptations and behavior. Below is a list of potential programs for grades 1 & 2 with *suggested* locations and seasons for each program. Please keep in mind that all programs can be modified to fit your school's curriculum goals and the learning interests of your classroom. If you are unable to come to Manomet, we can always find a way to bring programming to your school in-person or virtually!

We recommend combining **Songbird Science** with one of our **Stewardship Nature Walks**; however, programs can be mixed and matched in any way.

	Program Description	Location			Season		
		Manomet	Greenspace	Classroom	Fall	Winter	Spring
Songbird Science	Students will investigate bird form and function through movement, exploration, diagrams, models, and simple experiments. We'll use games and models to explore how different bird bills are adapted to different food types. We'll also use realistically weighted bird models to explore how individuals of the same species can differ in appearance and weight, and construct explanations for these differences. Finally, we'll examine habitat needs and population patterns and determine how birds interact with their surroundings to meet their needs. We'll use a kinesthetic migration game to connect what we have learned about birds in Massachusetts with the needs of those same birds at different places along their migration path! **The experience will culminate with a visit to the Manomet banding lab* – in person or virtual – to meet some live birds and see their adaptations in real life!**						
Bird Box Investigation	Student scientists will help Manomet monitor bird boxes as they explore the relationship between parents and their young! In the springtime, there is a lot of activity happening around the bird boxes in our meadow. Students will document bird behavior at nest boxes and then share with their peers as they construct explanations for what might be happening inside the box. Is a nest being built? Is a bird sitting on eggs? Are there chicks inside? Or could something else be happening? How can we tell without being able to see inside the box? As we explore Manomet's property on our way to and from the boxes, we'll also look for evidence of bird parents gathering food, and brainstorm what they might be collecting and whether it would be nutritious food for baby birds.						
Pollinators	What's so important about pollinators? Students will discover the power of pollinators for themselves as they help Manomet document pollinator activity. We'll brainstorm reasons why pollinators and plants need each other, and then set out on a pollinator hunt. We'll collect data on the different pollinators that visit our flowers, and look for patterns – do the pollinators seem to like some plants better than others? Do different pollinators visit different flowers? We'll investigate the differences between bees, butterflies, and other pollinators, and discuss how each animal has different adaptations for getting food from different parts of the flower! *Optional: it may be possible to arrange a visit with a local beekeeper as part of this activity.*						
Who Made that Sound?	What can you learn about nature with your ears? Students will play "Who Made That Sound?!" to learn local animal calls, then hit the trails to survey frogs, toads, birds, and other critters across a variety of habitats! During this lesson, we will visit at least two different habitats and collect data on what sounds we are hearing. Before visiting each location, students will make predictions about where there will be more animal activity and why. We will also examine the impact of environmental factors such as weather, time of day, and time of year on the sounds we are hearing. Students will contribute their data to ongoing biodiversity monitoring at Manomet Observatory. At the end of the survey, we will review and share what we have learned about the relationship between habitats and animal calls!						

**The banding lab operates in the Spring and Fall. If you are unable to schedule your program during these times, we can provide a link to a pre-recorded visit to the banding lab so students can see banding in action!*

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Grades 1 and 2
Songbird Science and Stewardship Nature Walk
MA STE/NGSS Standards Alignment

Manomet Programs and MA STE/NGSS: Manomet education programs can be used to support student progression toward a wide range of Massachusetts Science and engineering/NGSS performance expectations. Below, we provide a list of relevant Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Cross-Cutting Concepts covered. All Manomet education programs are customizable; teachers are encouraged to reach out to share their curricular priorities.

Performance Expectations Supported:

1-LS1-1: Use evidence to explain that different animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and see, find, and take in food, water, and air.

1-LS1-2: Obtain information to compare ways in which the behavior of different animal parents and their offspring help the offspring survive.

1-LS3-1: Use information from observations (first-hand and from media) to identify similarities and differences among individual plants or animals of the same kind.

2-LS2-3(MA): Develop and use models to compare how plants and animals depend on their surroundings and other living things to meet their needs in the places they live. (Songbird Science only)

2-LS4-1: Use texts, media, or local environments to observe and compare (a) different kinds of living things in an area, and (b) differences in the kinds of things living in different types of areas. (Stewardship Nature Walk only)

		Songbird Science	Stewardship Nature Walk
Science and Engineering Practices	**Developing and Using Models**	Students will manipulate and use model birds to identify the birds and determine their health status.	
	Analyzing and Interpreting Data	Students will use drawings to record predictions about what birds might need, and then to adjust drawings in response to information they gather during the lesson. Students will collect and interpret data on weighted models of birds to assess bird health.	Students will record evidence and use observations to describe a pattern or relationship found at multiple study sites to answer scientific questions and solve problems. Students will collect and interpret data on ongoing environmental monitoring projects.
	Constructing Explanations	Students will use data they have gathered and their own measurements to make claims regarding the health, migratory status, and adaptations of songbirds.	Students will collect data and use it to construct evidence-based explanations for how animals use their body parts and senses to survive in different habitats.
	Asking Questions and Defining Problems		Students will discuss data collected and share further questions that they have based on their observations.
	Planning and Carrying Out Investigations		Students will carry out an investigation of animal form and function in different habitats.
	Engaging in Argument from Evidence	Students will share the explanations they have constructed and defend those explanations with reasoning and with scientific evidence from their own measurements and from data they have gathered.	
	Communicating Information	Students will share their findings and ideas with the group, listening actively and comparing findings.	

		Songbird Science	Stewardship Nature Walk
Cross-Cutting Concepts	**Structure and Function**	Students will compare the bill shapes of different bird species and relate those shapes to what the bird eats.	
	Cause and Effect	Students will identify major events in the life of a bird such as migration and discuss how migration can be triggered by season changes.	Students will connect their observations of plants and animals to different environmental factors present in the habitat they are studying.
	Scale, Proportion and Quantity	Students will use relative scales to describe the weight of their bird models and relate those measurements to bird ecology.	Students will measure leaf size, organism abundance, or other environmental factors and describe how and why it may be different from their classmates' findings.
	Patterns		Students will make observations of plant and animal abundance and describe the patterns they are seeing as a group.
	Systems and System Models		Students will observe how different plants and animals work together to create systems.
	Stability and Change	Students will discuss how organisms are affected by seasonal changes and by human impacts on habitat at very local scales.	

Disciplinary Core Ideas Addressed	**LS1.A:** Plants and animals have external parts that they use to perform daily functions.
	LS1.C: Animals obtain food they need from plants or other animals.
	LS2.A: Plants and animals depend on their surroundings to get what they need.
	LS4.C: Different places on earth each have their own unique assortment of organisms.
	ESS3.A: Living things need water, air, and resources from the land, and they live in places that have the things they need.
	ESS3.C: Things people do can affect the environment but they can make choices to reduce their impacts.