

Magnuson Nature Programs- Wetland Discoveries field trip- NGSS Correlations 3-5

Field Trip Activity	Disciplinary Core Ideas	Crosscutting Concepts	Science and Engineering Practices	MNP Objectives (Students will:)
<p>Animal Sign Detectives: Students will explore the idea that there are many ways to tell if animals have been in an area, even if the animal itself is not seen. They will then be nature detectives as they led on a guided walk through the wetlands in search of animal signs and clues. They will use their observations and prior knowledge to decide if the sign is caused by a bird, insect, or mammal.</p>	<p>LS1.A: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)</p>	<p>Structure and Function: Different materials have different substructures, which can sometimes be observed. Substructures have shapes and parts that serve functions</p>	<p>Asking Questions and Defining Problems: Ask questions about what would happen if a variable is changed. Ask questions that can be investigated and predict reasonable outcomes based on patterns such as cause and effect relationships.</p>	<p>Be able to identify multiple signs that wildlife is or has been present in the park, and be able to see parallels of these signs in their own daily lives.</p>
	<p>LS1.B: Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)</p>	<p>Systems and System Models: A system is a group of related parts that make up a whole and can carry out functions its individual parts cannot. A system can be described in terms of its components and their interactions.</p>	<p>Constructing Explanations and Designing Solutions: Construct an explanation of observed relationships (e.g., the distribution of plants in the back yard). Use evidence (e.g., measurements, observations, patterns) to construct or support an explanation or design a solution to a problem. Identify the evidence that supports particular points in an explanation.</p>	<p>Understand that wildlife habitat can easily co-exist within the human activity zones of the park.</p>
	<p>LS2.A: The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)</p>	<p>Patterns: Patterns can be used as evidence to support an explanation.</p>	<p>Analyzing and Interpreting Data: Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.</p>	<p>Understand the signs left by wildlife are related to their habitat needs and the special adaptations that they use to get the things they need.</p>
	<p>LS2.D: Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (Note: Moved from K–2). (3-LS2-1) LS4:C: For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)</p>	<p>Cause and Effect: Cause and effect relationships are routinely identified, tested, and used to explain change. Events that occur together with regularity might or might not be a cause and effect relationship. Scale, Proportion, and Quantity: Natural objects and/or observable phenomena exist from the very small to the immensely large or from very short to very long time periods.</p>		
<p>LS4.D: Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4) ESS2.E: Living things affect the physical characteristics of their regions. (4-ESS2-1)</p>				

Water Wonders: Students will explore the aquatic invertebrates that are found in the ponds at Magnuson Park. They will attempt to identify their discoveries through careful observation, and make connections about life cycles and food webs within the ponds. (?)

<p>LS1.A: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)</p>	<p>Structure and Function: Different materials have different substructures, which can sometimes be observed. Substructures have shapes and parts that serve functions</p>	<p>Constructing Explanations and Designing Solutions: Construct an explanation of observed relationships (e.g., the distribution of plants in the back yard). Use evidence (e.g., measurements, observations, patterns) to construct or support an explanation or design a solution to a problem. Identify the evidence that supports particular points in an explanation.</p>	<p>Be able to identify macroinvertebrates in the pond water through careful observation of traits and use of scientific identification guides.</p>
<p>LS1.B: Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)</p>	<p>Systems and System Models: A system is a group of related parts that make up a whole and can carry out functions its individual parts cannot. A system can be described in terms of its components and their interactions.</p>	<p>Analyzing and Interpreting Data: Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.</p>	<p>Understand that each macroinvertebrate is important to the health of the whole wetlands food chain.</p>
<p>LS1.D: Different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2)</p>	<p>Patterns: Patterns can be used as evidence to support an explanation.</p>	<p>Asking Questions and Defining Problems: Ask questions about what would happen if a variable is changed. Ask questions that can be investigated and predict reasonable outcomes based on patterns such as cause and effect relationships.</p>	<p>Understand that the presence or absence of certain species can be an indicator of the health of the greater ecosystem.</p>
<p>LS2.A: The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as "decomposers." Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)</p>			
<p>LS4.C For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3) LS4.C: Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)</p>			

Wetland Homes: After discussing what all animals need from their habitat, students will be given identification cards labelled "food," "water," "shelter," and "nesting places." Students will then have the opportunity to explore a stretch of trail and look for places that could provide these things for different types of animals (mammals, birds, or insects).

<p>LS1.B: Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)</p>	<p>Systems and System Models: A system is a group of related parts that make up a whole and can carry out functions its individual parts cannot. A system can be described in terms of its components and their interactions.</p>	<p>Asking Questions and Defining Problems: Ask questions about what would happen if a variable is changed. Ask questions that can be investigated and predict reasonable outcomes based on patterns such as cause and effect relationships.</p>	<p>Understand the four basic needs of all wildlife, and how the habitat in the wetlands provides for these needs.</p>
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<p>LS1.C: Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary to 5-PS3-1)</p>	<p>Patterns: Patterns can be used as evidence to support an explanation.</p>	<p>Analyzing and Interpreting Data: Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.</p>	<p>Understand that wildlife habitat and areas designed for human recreation can easily co-exist.</p>
<p>LS2.A: The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as "decomposers." Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)</p>		<p>Constructing Explanations and Designing Solutions: Construct an explanation of observed relationships (e.g., the distribution of plants in the back yard). Use evidence (e.g., measurements, observations, patterns) to construct or support an explanation or design a solution to a problem. Identify the evidence that supports particular points in an explanation.</p>	<p>Be able to see how their own backyard, schoolyard, or neighborhood is already providing these basic needs, and how it could be changed to better accomplish this.</p>
<p>LS4.D: Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)</p>			

Overarching Message

<p>ESS3.C - Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)</p>			<p>Have their curiosity about pond organisms and other wetlands wildlife encouraged, and develop empathy and respect for these organisms.</p>
<p>Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (2-ESS2-3)</p>			<p>Develop the art of watching and listening, and recognize the rewards that result. Be empowered to instigate and carry out stewardship activities in their own community that will benefit wildlife.</p>