

Magnuson Nature Programs- Life in the Garden field trip- NGSS Correlations 3-5

Field Trip Activity	Disciplinary Core Ideas	Crosscutting Concepts	Science and Engineering Practices	MNP Objectives
<p>Digging into Decomposition: Students will learn about the role of decomposers in decomposition and soil building through guided conversation and exploration of the compost in the worm bin. Students will have a chance to make their own discoveries in the worm bin and identify some of the invertebrates that they find there, and keep track of the decomposers that they find on their decomposers track-sheet.</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>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>Structure and Function: Different materials have different substructures, which can sometimes be observed. Substructures have shapes and parts that serve functions</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.</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>Analyzing and Interpreting Data: Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.</p>	<p>(Students will:)</p> <p>Understand that healthy soil is essential in order for plants to be healthy.</p> <p>Be able to identify micro and macro organisms in the worm bin compost, and understand that each is important to the health of the whole soil food chain (food web).</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>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>LS2.B: Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (5-LS2-1)</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>	<p>Patterns: Patterns can be used as evidence to support an explanation.</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.</p>		

Snack Walk: Students will first explore an area planted with native plants that are good food sources for wildlife, and see if they can find any evidence of food sources that wildlife might snack on. They will then get a chance to try a variety of vegetables and herbs from the garden to do a taste test of the garden, and participate in garden stewardship by helping to plant or take care of the plants there.

LS1.A: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)

Structure and Function: Different materials have different substructures, which can sometimes be observed. Substructures have shapes and parts that serve functions

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.

Understand that providing wildlife habitat within the community garden benefits both the animals who utilize the habitat, and the gardening goals of the people who use the space.

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)

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.

Analyzing and Interpreting Data: Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.

Be encouraged to eat and enjoy fresh, organic, nutritious food crops.

Patterns: Patterns can be used as evidence to support an explanation.

Asking Questions and Defining Problems: Ask questions about what would happen if a variable is changed.

Know how to safely pick food crops so that they will continue to bear.

Perfect Plant Protection: Students will explore the childrens garden and learn about plants that protect themselves from being eaten by animals through a variety of adaptations, including thorns, fuzzy textures, and strong chemical odors and flavors. Students will then get a chance to take some of the plants that protect themselves through odors home with them by creating a "sniffer cup."

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Asking Questions and Defining Problems: Ask questions about what would happen if a variable is changed.

Understand the ways that plants have evolved to protect themselves from herbivores, and how humans have learned to utilize some of those protection methods to meet our own needs.

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)
LS4.D: Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)

Structure and Function: Different materials have different substructures, which can sometimes be observed. Substructures have shapes and parts that serve functions

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LS4.B Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)

Obtaining, Evaluating, and Communicating Data: Read and comprehend grade-appropriate complex texts and/or other reliable media to summarize and obtain scientific and technical ideas and describe how they are supported by evidence.

Overarching message:

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)

Have their curiosity about soil organisms and plants inspired, and develop empathy and respect for these organisms.

Develop the art of watching and listening, and recognize the rewards that result. Be empowered to see their own schoolyard and/or backyard as having the potential to grow healthy and delicious food. Be empowered to instigate and carry out stewardship activities in their own community that will benefit soil and plant health.