



Discover Nature Schools Nature Unleashed unit for Grades 3-5

Crosswalk to the Next Generation Science Standards

The Nature Unleashed unit supports the three-dimensional framework of the Next Generation Science Standards (NGSS). All NGSS performance expectations per lesson are combined within the framework. The term "precursor" is used where an activity does not fully address a standard unless modified. Strike-out text indicates portions of the Disciplinary Core Ideas that are not specifically addressed in the lesson.

LESSON	NGSS	SCIENCE AND ENGINEERING PRACTICES	DISCIPLINARY CORE IDEAS	CROSS CUTTING CONCEPTS
Lesson 1 It's All Connected	K-LS1.1 3-LS2-1	<ul style="list-style-type: none"> Analyzing and Interpreting Data Engaging in Argument from Evidence 	<p>LS1.C: Organization for Matter and Energy Flow in Organisms All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p> <p>LS2.D: Social Interactions and Group Behavior 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.</p>	<ul style="list-style-type: none"> Patterns Cause and Effect
			<p>ESS3.A: Natural Resources Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.</p> <p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</p> <p>ETS1.A: Defining and Delimiting Engineering Problems Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account.</p> <p>ETS1.B: Developing Possible Solutions Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs.</p>	<ul style="list-style-type: none"> Cause and Effect Systems and System Models Influence of Science, Engineering, and Technology on Society and the Natural World

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Lesson 3 Having What it Takes to Survive!	3-LS4-2 3-LS4-3 4-LS1-1 4-LS1-2 (precursor) 3-5ETS1-3 (precursor)	<ul style="list-style-type: none"> Engaging in Argument from Evidence Constructing Explanations and Designing Solutions 	<p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.</p> <p>LS4.B: Natural Selection Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.</p> <p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there.</p>	<ul style="list-style-type: none"> Structure and Function Systems and System Models Cause and Effect
Lesson 4 Chain of Foods	3-LS4-3 3-LS-4-4 5-LS2-1 5-LS1-1 5-PS3-1	<ul style="list-style-type: none"> Engaging in Argument from Evidence Developing and Using Models 	<p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.</p> <p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there.</p> <p>LS1.C: Organization for Matter and Energy Flow in Organisms Plants acquire their material for growth chiefly from air and water.</p> <p>LS2.A: Interdependent Relationships in Ecosystems 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.</p> <p>PS3.D: Energy in Chemical Processes and Everyday Life The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water).</p>	<ul style="list-style-type: none"> Systems and system models Cause and Effect Scale, Proportion and Quantity Energy and Matter

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Lesson 5 You Eat What?!!	3-LS4-34- LS1-15- LS1-15- LS2-1	<ul style="list-style-type: none"> Engaging in Argument from Evidence Developing and Using Models 	<p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there.</p> <p>LS2.A: Interdependent Relationships in Ecosystems 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.</p> <p>LS2.B: Cycles of Matter and Energy Transfer in Ecosystems 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.</p>	<ul style="list-style-type: none"> Cause and Effect Systems and System Models Energy and Matter

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Lesson 6 You Want Flies with That?	K-ESS2-2 K-LS1-1 3-LS4-4 5-ESS3-1 5-LS2-1 (precursor)	<ul style="list-style-type: none"> Engaging in Argument from Evidence Analyzing and Interpreting Data Developing and Using Models 	<p>ESS3.C: Human Impacts on Earth Systems Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.</p> <p>LS1.C: Organization for Matter and Energy Flow in Organisms All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there.</p> <p>ESS3.C: Human Impacts on Earth Systems 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.</p> <p>LS2.A: Interdependent Relationships in Ecosystems 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.</p>	<ul style="list-style-type: none"> Patterns Cause and Effect Systems and System Models

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Lesson 7 It All Makes Sense	2-LS2-2 3-LS4-3 3-LS4-4 5-ESS3-1	<ul style="list-style-type: none"> • Planning and Carrying Out Investigations • Engaging in Argument from Evidence • Obtaining, Evaluating, and Communicating Information 	<p>LS2.A: Interdependent Relationships in Ecosystems Plants depend on water and light to grow. Plants depend on animals for pollination or to move their seeds around.</p> <p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.</p> <p>LS4.B: Natural Selection Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.</p> <p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there.</p> <p>ESS3.C: Human Impacts on Earth Systems 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.</p>	<ul style="list-style-type: none"> • Cause and Effect • Structure and Function • Systems and System Models

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Lesson 8 Humans are Organisms, Too	K-ESS3-3 3-LS4-3 3-LS4-4 5-ESS3-1	<ul style="list-style-type: none"> • Obtaining, Evaluating, and Communicating Information • Asking Questions and Defining Problems • Developing and Using Models • Engaging in Argument from Evidence 	<p>ESS3.C: Human Impacts on Earth Systems Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.</p> <p>ETS1.B: Developing Possible Solutions Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people.</p> <p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there.</p> <p>ESS3.C: Human Impacts on Earth Systems 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.</p>	<ul style="list-style-type: none"> • Cause and Effect • Systems and System Models

This crosswalk publication was created as a tool for teachers, curriculum coordinators, and school administrators to more effectively use Nature Unleashed lessons in their schools and classrooms. The Missouri Department of Conservation is grateful for the dedicated service of St. Louis area curriculum coordinators Joe Barton, Susan Raney, Melinda Troxel, and Skylar Wiseman who coordinated efforts with the Conservation Department's St. Louis region education consultants.