Take A Walk on the Wildside
Outdoor Science Program
5th Grade
Curriculum Standards/Activity

Lessons: Earth Science Life Science Physical Science ETS	**Grade**	**State ID** **NGSS** **TASS**	**Description**	**Standard**
Rocks	5	5.ESS1	By learning the characteristics of rocks students can understand how fossil are formed.	*Use evidence from the presence and location of fossils to determine the order in which rock strata were formed
Fossils	5	5.ESS1	Studying local rock formations and fossils to understand history	*Use evidence from the presence and location of fossils to determine the order in which rock strata were formed
Weathering & Erosion	5	5.ESS1	Students generate multiple possible solutions to protect homes from a landslide.Students realize that there are many causes for erosion.	*Use evidence from the presence and location of fossils to determine the order in which rock strata were formed
Shadow Clocks	5	5.ESS1	Students will create a shadow clock to gain an understanding of how the position of the sun can teach us.	*Relate the tilt of the Earth's axis, as it revolves around the sun, to the varying intensities of sunlight at different latitudes. Evaluate how this causes changes in day-lengths and seasons.
Constellations	5	5.ESS1	Using various tools to study constellations and their impact on the earth	*Explain that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth. *Research and explain the position of the Earth and the solar system within the Milky Way galaxy, and compare the size and shape of the Milky Way to other galaxies in the universe. * Use data to categorize different bodies in our solar system including moons, asteroids, comets, and meteoroids according to their physical properties and motion. * Explain the cause and effect relationship between the positions of the sun, earth, and moon and resulting eclipses, position of constellations, and appearance of the moon. * Relate the tilt of the Earth's axis, as it revolves around the sun, to the varying intensities of sunlight at different latitudes. Evaluate how this causes changes in day-lengths and seasons.
Forestry	5	5.LS1 5.LS3	Observation of the natural elements while hiking a trail	*Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions. *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment. * Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group

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		5.LS4		of similar organisms *Use evidence to construct an explanation for how variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction
Lichens	5	5.LS1 5.LS3	Using observation and experiments to study and compare	*Compare and contrast animal responses that are instinctual versus those that that are gathered through the senses, processed, and stored as memories to guide their actions *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment. *Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms
Adaptations	5	5.LS3	Games to help students understand life adaptations and survival	*Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment. *Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms
Honey Bee challenge	4	4.LS2	(coming soon)	*support an argument with evidence that plants get the materials they need for growth and reproduction through photosynthesis. *Using information about the roles of organisms, evaluate how those roles in food chains are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.

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				*Develop/use models to determine the effects of introducing a species to, or removing a species from, an ecosystem and how either one can damage the balance of an ecosystem.
Food Chain	5	5.LS2	Through the experience of an active game, students recreate surviving in a food chain dominoes.	*Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions. *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment. * Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms *Use evidence to construct an explanation for how variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction
Oh Turkey	5	5.LS3		Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment.
Owl	5	5.LS3	Dissect owl pellets	Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment.

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Aquatic Studies	5	5.LS1 5.LS3	Studying samples from the local creek to learn about macros and a healthy environment	*Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions. *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment. * Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms *Use evidence to construct an explanation for how variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment.
Virtual Animals	5	5.LS2 5.LS3 5.LS4	Students design an animal and explain the physical traits that enable the organism to survive and be a part of the food web. Symbiosis, mutualism, parasitism	*Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions. *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment. * Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms *Use evidence to construct an explanation for how variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this

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				concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment.
Entomology relay	5.LS1 5.LS3			*Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions. *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment. * Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms *Use evidence to construct an explanation for how variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction *Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment.
Chemistry in the Kitchen *Saturation *Reactionary *Conservation of Matter	5	5.PS1	Chosen experiments that enable students to have a hands on experience with various forms of matter and their reactions	*Analyze and interpret data from observations and measurements of the physical properties of matter to explain phase changes between a solid, liquid, or gas. *Analyze and interpret data to show that the amount of matter is conserved even when it changes form, including transitions where matter

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*Properties Matter *Oxidation & Secret ink *Cookie cutter experiments *Gases & Particles				seems to vanish. *Design a process to measure how different variables (temperature, particle size, stirring) affect the rate of dissolving solids into liquids *Evaluate the results of an experiment to determine whether the mixing of two or more substances result in a change of properties.
Balanced & Unbalanced Forces *gravitational zipline *Elastic Archery *Flight & Design Rockets *Junk Drawer cars *Team Building-(nitro, grinder,whale watch, wire woosey, balance boards,trolleys)	5	5.PS2	Depending on which activity is chosen- students will design/create/explain how the transfer of energy and the balance of energy exists	*Test the effects of balanced and unbalanced forces on the speed and direction of motion of objects *Make observations and measurements of an object's motion to provide evidence that a pattern can be used to predict future motion *Use evidence to support that the gravitational force exerted by Earth on objects is directed toward the Earth's center *Explain the cause and effect relationship of two factors (mass and distance) that affect gravity *Explain how forces can create patterns within a system (moving in one direction, shifting back and forth, or moving in cycles), and describe conditions that affect how fast or slowly these patterns occur
Hydrosphere & Water Distribution	5	5.PS1	Using a game- Incredible Journey students will show how the cycle of water distributes across the globe.	*Analyze and interpret data from observations and measurements of the physical properties of matter to explain phase changes between a solid, liquid, or gas. *Analyze and interpret data to show that the amount of matter is conserved even when it changes form, including transitions where matter seems to vanish. *Design a process to measure how different variables (temperature, particle size, stirring) affect the rate of dissolving solids into liquids *Evaluate the results of an experiment to determine whether the mixing of two or more substances result in a change of properties.
*Rock Prevention *Natural Disasters		5.ETS1 5.ETS2		*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more

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*Weather vs Climate				elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
Landscaping models		5.ETS1 5.ETS2	Students will create a plan on how to work together to create a landscape to prevent erosion	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
Humpty Dumpty II	5	5.ETS1 5.ETS2	A revised version of an egg drop	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more

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				elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
Jenga Tower	5	5.ETS1 5.ETS2	Using massive wood blocks, students play the game Jenga	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
The Birds	5	5.ETS1	Using binoculars, students play bingo and discuss/create other	*Research, test, re-test, and communicate a design to solve a problem.

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		5.ETS2	options to binoculars	* Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
Rockets	5	5.ETS1 5.ETS2	Using paper/pvc pipes, students will create a functionable rocket that will be launched with an air compressor.	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
Global Trash monsters/Human	5	5.ETS1	Using clean trash students will design a replica of a tool to solve a	*Research, test, re-test, and communicate a

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footprints		5.ETS2	world problem	design to solve a problem. * Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.

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				individuals within the same species may provide advantages to these individuals in their survival and reproduction
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				damage the balance of an ecosystem.
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Chemistry in the Kitchen *Saturation *Reactionary *Conservation of Matter	5	5.PS1	Chosen experiments that enable students to have a hands on experience with various forms of matter and their reactions	*Analyze and interpret data from observations and measurements of the physical properties of matter to explain phase changes between a solid, liquid, or gas. *Analyze and interpret data to show that the amount of matter is conserved even when it changes form, including transitions where matter

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Balanced & Unbalanced Forces *gravitational zipline *Elastic Archery *Flight & Design Rockets *Junk Drawer cars *Team Building-(nitro, grinder,whale watch, wire woosey, balance boards,trolleys)	5	5.PS2	Depending on which activity is chosen- students will design/create/explain how the transfer of energy and the balance of energy exists	*Test the effects of balanced and unbalanced forces on the speed and direction of motion of objects *Make observations and measurements of an object's motion to provide evidence that a pattern can be used to predict future motion *Use evidence to support that the gravitational force exerted by Earth on objects is directed toward the Earth's center *Explain the cause and effect relationship of two factors (mass and distance) that affect gravity *Explain how forces can create patterns within a system (moving in one direction, shifting back and forth, or moving in cycles), and describe conditions that affect how fast or slowly these patterns occur
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*Rock Prevention *Natural Disasters		5.ETS1 5.ETS2		*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more

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Landscaping models		5.ETS1 5.ETS2	Students will create a plan on how to work together to create a landscape to prevent erosion	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
Humpty Dumpty II	5	5.ETS1 5.ETS2	A revised version of an egg drop	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more

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Jenga Tower	5	5.ETS1 5.ETS2	Using massive wood blocks, students play the game Jenga	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
The Birds	5	5.ETS1	Using binoculars, students play bingo and discuss/create other	*Research, test, re-test, and communicate a design to solve a problem.

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Rockets	5	5.ETS1 5.ETS2	Using paper/pvc pipes, students will create a functionable rocket that will be launched with an air compressor.	*Research, test, re-test, and communicate a design to solve a problem. * Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype. * Describe how failure provides valuable information toward finding a solution *Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology. *Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently. * Identify how scientific discoveries lead to new and improved technologies.
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