

Grade 4 Science Proficiency Scale T1

	Novice “1”	Approaching “2”	Proficient “3”	Advanced “4”
Communication	Practices asking questions to help check for understanding in relation to Life Science concepts.	Asks questions to check for understanding in relation to Life Science concepts.	Asks questions to check for understanding; clearly explains strategies, thinking and conclusions in relation to Life Science concepts.	Asks questions to check for understanding; clearly explains strategies, uses relevant information and evidence to support and make conclusions in relation to Life Science concepts.
Critical Thinking	Participates in whole group reading information and make observations about internal and external structures of living things, and how those structures support survival, growth, behavior and reproduction; <u>and</u> observes a model and the connections between the senses and the brain.	Gathers information about the internal and external structures of living things, gives an example of how those structures support survival, growth, behavior or reproduction; <u>and</u> applies a model and makes the connections between the senses and the brain to receive, process, and respond to information.	Gathers relevant information about the internal and external structures of living things, draws conclusions and cites evidence to validate how those structures support survival, growth, behavior and reproduction; <u>and</u> utilizes a model to describe the connections between the senses and the brain to receive, process, and respond to information and reflects on that process and the different reactions.	Gathers relevant information about the internal and external structures of living things, draws conclusions and cites evidence to validate how those structures support survival, growth, behavior and reproduction; <u>and</u> utilizes a unique and creative model to describe the connections between the senses and the brain to receive, process, and respond to information and reflects on that process and analyze the different reactions produced by diverse situations.
<p>ND Science Standards:</p> <ul style="list-style-type: none"> • 4-LS1-1: Construct an argument that plants, and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. • 4-LS1-2: Form an explanation to describe that animals receive different types of information through their senses, process information in their brain, and respond to the information in different ways. • 4-PS4-2: Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. <p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> • LS1.A: Structure and Function: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. • LS1.D: Information Processing: Different sense receptors are specialized for information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. 				

Grade 4 Science Proficiency Scale T2

	Novice “1”	Approaching “2”	Proficient “3”	Advanced “4”
Communication	Practices asking questions to help check for understanding in relation to Physical Science concepts.	Asks questions to check for understanding in relation to Physical Science concepts.	Asks questions to check for understanding and clearly explains strategies, thinking and conclusions in relation to Physical Science concepts.	Asks questions to check for understanding; clearly explains strategies, uses relevant information and evidence to support and make conclusions in relation to Physical Science concepts.
Critical Thinking	Participates in whole group reading information about energy and fuels derived from natural resources and how their uses affect the environment; <u>and</u> participates in whole group reading information about changes and transfers of energy and observes and participates in the building of a graphic organizer designed to compare and contrast patterns used to transfer information and observes connections and patterns from a model of amplitude and wavelength and contributes to building a device that transfers energy.	Analyzes information about energy and fuels derived from natural resources and how their uses affect the environment; <u>and</u> gathers information to help predict changes and transfers of energy and compares and contrasts patterns used to transfer information and describes connections and patterns from a model of amplitude and wavelength and helps to design, test, and refine a device that transfers energy.	Analyzes and synthesizes information from multiple sources about energy and fuels derived from natural resources and how their uses affect the environment and explains the thinking process and reflects; <u>and</u> gathers relevant information to draw conclusions and predicts changes and transfers of energy and compares and contrasts patterns used to transfer information and describes connections and patterns by developing a model of amplitude and wavelength and uses systems thinking to design, test, and refine a device that transfers energy; explain the thinking process and reflects.	Analyzes and synthesizes information from multiple sources about energy and fuels derived from natural resources and how their uses affect the environment, explains the thinking process and reflects; <u>and</u> gathers relevant information to draw conclusions and predict changes and transfers of energy and compares and contrasts patterns used to transfer information and describes connections and patterns by developing a model of amplitude and wavelength and uses systems thinking to design, test, and refine a unique and creative device that transfers energy; and shows understanding of the impact of decisions about materials and process used to create the solution explains the thinking process and reflects.
<p>ND Science Standards</p> <ul style="list-style-type: none"> • 4-PS3-1: Use evidence to construct an explanation relating the speed of an object to the energy of that object. • 4-PS3-2: Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. • 4-PS3-3: Ask questions and predict outcomes about the changes in energy that occur when objects collide. • 4-PS3-4: Using the engineering design process build a device that converts energy from one form to another. • 4-PS4-1: Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. • 4-PS4-3: Construct a code to convey information by researching past and present methods of transmitting information. 				

Grade 4 Science Proficiency Scale T3

	Novice “1”	Approaching “2”	Proficient “3”	Advanced “4”
Communication	Practices asking questions to help check for understanding in relation to Earth Science concepts.	Asks questions to check for understanding; in relation to Earth Science concepts.	Asks questions to check for understanding; clearly explains strategies thinking and conclusions in relation to Earth Science concepts.	Asks questions to check for understanding; clearly explains strategies, uses relevant information and evidence to support and make conclusions in relation to Earth Science concepts.
Critical Thinking	Observe and participate in the building of a graphic organizer designed to compare and contrast proposals to reduce the impact of earthquakes, floods, tsunamis, or volcanic eruptions and Contribute to building a solution to reduce the impact of natural Earth processes and Observe maps and models of the Earth and look at patterns of features and review evidence of the effects of weather or erosion.	Compare and contrast proposals to reduce the impact of earthquakes, floods, tsunamis, or volcanic eruptions and Help design a solution to reduce the impact of natural Earth processes and Analyze maps and models to describe patterns of features and provide evidence of the effects of weather or erosion.	Compares and contrasts proposals to reduce the impact of earthquakes, floods, tsunamis, or volcanic eruptions and uses systems thinking to design a solution to reduce the impact of natural Earth processes and analyzes maps and models to describe patterns of features and provides evidence of the effects of weather or erosion; and cites evidence from patterns to support changes in landscape over time.	Compares and contrasts proposals to reduce the impact of earthquakes, floods, tsunamis, or volcanic eruptions and uses systems thinking to design a unique and creative solution to reduce the impact of natural Earth processes and show understanding of the impact of decisions about materials and process used to create the solution; <u>and</u> maps and models to describe patterns of features and provide evidence of the effects of weather or erosion; and cites evidence from patterns to support changes in landscape over time.
<p>ND Science Standards:</p> <ul style="list-style-type: none"> • 4-ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. • 4-ESS2-1: Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. • 4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth’s features. • 4-ESS3-1: Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. (Also addressed in T2 Conversion Unit) • 4-ESS3-2: Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. 				