

Hawai‘i Grade 4 Science Performance Level Descriptors	
Well Below Proficient	Students performing at the Well Below Proficiency level demonstrate skills and understandings of science below the performance required to reach the Approaches Proficiency level.
Approaches Proficiency	<ul style="list-style-type: none"> • Identifies testable hypotheses and experimental procedures; identifies examples of observations and inferences • Identifies examples of how the use of technology has influenced the economy, demography, and environment of Hawai‘i • Describes how simple food chains or food webs can be traced back to plants; identifies that an organism’s behavior is influenced by its environment • Recognizes one difference between plant and animal cells • Identifies the connection between fossils and living things; identifies organisms and their roles in the same environment; lists specific environmental conditions that organisms need to survive • Identifies how some materials may be combined to form new substances; lists the materials used in a circuit to create light and sound • Recognizes that Earth exerts a gravitational force on objects • Identifies examples of the shaping and reshaping of Earth’s land surface due to slow processes; identifies examples of the shaping and reshaping of Earth’s land surface due to fast processes; identifies Earth’s daily rotation and annual revolution
Meets Proficiency	<ul style="list-style-type: none"> • Describes testable hypotheses and experimental procedures; distinguishes between observations and inferences • Describes a particular example of how the use of technology has influenced the economy, demography, and environment of Hawai‘i • Explains how both simple food chains and food webs can be traced back to plants; describes how an organism’s behavior is influenced by its environment • Identifies basic differences between plant cells and animal cells • Compares fossils and living things; describes the roles of various organisms in the same environment; describes how different organisms need specific environmental conditions to survive • Describes how some materials may be combined to form new substances; describes how materials are used for electricity to flow in a circuit to create light and sound • Describes that the mass of Earth exerts a gravitational force on objects • Describes how the shaping and reshaping of Earth’s land surface are due to slow processes; describes how the shaping and reshaping of Earth’s land surface are due to fast processes; describes the relationship between the sun and Earth’s daily rotation and annual revolution
Exceeds Proficiency	<ul style="list-style-type: none"> • Creates testable hypotheses and develops experimental procedures to test them; explains the differences between observations and inferences and provides examples of each • Explains how the use of technology has influenced the economy, demography, and environment of Hawai‘i • Recognize that producers ultimately provide food for all organisms in a food chain or food web and are able to predict the effects on other organisms in the ecosystem if the plant population decreased; explains how different organisms’ behaviors are influenced by their environments and provides examples • Describes differences between plant cells and animal cells and provides examples • Compares and uses evidence to explain the relationship between fossils and living things; analyzes how the roles of different organisms affect their interaction in the same environment; explains how different organisms need specific environmental conditions to survive and provides examples • Predicts the new substances that will be formed when some materials are combined; uses materials to set up a closed circuit to create light and sound • Describes that the mass of Earth exerts a gravitational force toward its center on all objects • Uses evidence to describe how slow processes have shaped and reshaped the surface of Earth; uses evidence to describe how fast processes have shaped and reshaped the surface of Earth; uses evidence to describe the relationship between the sun and Earth’s daily rotation and annual revolution

Hawai'i Grade 8 Science Performance Level Descriptors	
Well Below Proficient	Students performing at the Well Below Proficiency level demonstrate skills and understandings of science below the performance required to reach the Approaches Proficiency level.
Approaches Proficiency	<ul style="list-style-type: none"> • Identifies some connections between scientific evidence and conclusions; presents some of the components of a scientific investigation, using appropriate techniques • Identifies examples of significant relationships among society, science, and technology; recognizes how some parts of a scale or mathematical model can be used to support and explain scientific data • Identifies how changes in the physical environment affect the survival of organisms • Recognizes how the wavelength affects the color of light within the electromagnetic spectrum; recognizes how seismic waves provide scientists with information about the structure of Earth's interior; recognizes some characteristics or properties of mechanical and electromagnetic waves • Recognizes that all objects with mass exert a gravitational force on other objects • Identifies the characteristics of the three main types of rocks; describes the rock cycle; recognizes that Earth's motions and tilt on its axis affect the seasons and weather patterns; describes how the sun is the major source of energy on Earth; defines continental drift and plate tectonics; describes density and convection currents in the ocean and atmosphere; identifies the physical characteristics of the oceans; identifies the composition of objects in the galaxy; describes the predictable motions of Earth and the moon; describes the characteristics or movement patterns of the planets in our solar system; identifies some of the major components of the universe; illustrates the motions of planetary systems
Meets Proficiency	<ul style="list-style-type: none"> • Determines and describes connection(s) among scientific evidence and conclusions; communicates the significant components of the experimental design and results of a scientific explanation • Describes significant relationships among science, society, and technology and how one impacts the other; describes how scale and mathematical models can be used to support and explain scientific data • Describes how changes in the physical environment affect the survival of organisms • Describes the relationship between the color of light and wavelength in the electromagnetic spectrum; describes how seismic waves provide scientists with information about the structure of Earth's interior; identifies the characteristics and properties of mechanical and electromagnetic waves • Explains that every object has mass and therefore exerts a gravitational force on other objects • Compares the characteristics of the three main types of rocks; illustrates the rock cycle and explains how igneous, metamorphic, and sedimentary rocks are formed; describes how Earth's motions and tilt on its axis affect the seasons and weather patterns; explains how the sun is the major source of energy influencing climate and weather on Earth; explains the concepts of continental drift and plate tectonics; explains the relationship between density and convection currents in the ocean and atmosphere; describes the physical characteristics of the oceans; describes the composition of objects in the galaxy; explains the predictable motions of Earth and the moon; compares the characteristics and movement patterns of the planets in our solar system; describes the major components of the universe; describes the role of gravitational force in the motions of planetary systems
Exceeds Proficiency	<ul style="list-style-type: none"> • Justifies connection(s) and implications among scientific evidence and conclusions; evaluates the results and validates the design of an experiment, including the safe and appropriate use of tools and techniques to organize, analyze, and validate data; • Evaluates significant relationships among society, science, and technology and how one impacts the other; creates a scale or mathematical model to support and explain scientific data • Predicts how changes in the physical environment will affect the survival of organisms • Analyzes the relationship between the color of light and wavelength in the electromagnetic spectrum; explains how S-waves and P-waves provide different information about the structure of Earth's interior; describes in detail the characteristics and properties of mechanical and electromagnetic waves • Explains how mass affects the extent of an object's gravitational force on another object • Classifies rocks by their characteristics and justifies their placement into the three main categories; illustrates the rock cycle and describes the major factors in the formation of igneous, metamorphic, and sedimentary rocks; compares how Earth's motions and tilt on its axis affect the seasons and weather patterns in different regions of the world; analyzes and explains the importance of the sun's role in influencing the climate and weather on Earth; defends a prediction for future continental drift on the basis of knowledge of plate tectonics; explains the relationship between density and convection currents and how they affect the ocean and atmosphere; analyzes the physical characteristics of the oceans and their impact; analyzes and compares the composition of different objects in the galaxy; analyzes the predictable motions of Earth and the moon and their impact on Earth; analyzes and explains the characteristics and movement patterns of the planets in our solar system; analyzes and compares the major components of the universe and their characteristics; analyzes the effect of gravitational force on the motion of planets at different positions in their orbits

Hawai'i Biology I End-of-Course Performance Level Descriptors

Well Below Proficient	Students performing at the Well Below Proficiency level demonstrate skills and understandings of science below the performance required to reach the Approaches Proficiency level.
Approaches Proficiency	<ul style="list-style-type: none"> • Recognizes that a hypothesis may need to be revised; identifies some details related to the design selected for an experiment, including the safe and appropriate use of tools and techniques to organize, analyze, and validate data; presents conclusions, explanations, and arguments that are partially supported by logic, scientific knowledge, or evidence from data; identifies some connections between hypotheses, scientific evidence, or conclusions; communicates some components of a scientific investigation, using appropriate techniques; participates in peer review or identifies some reasons for peer review in science; recognizes the need to revise conclusions and explanations on the basis of new evidence; describes some reasons for ethics and integrity in scientific investigation; explains some of the criteria used to evaluate scientific explanations • Identifies examples of ways scientific advancements and emerging technology have influenced society; describes the risks and benefits of potential solutions to technological issues • Identifies biogeochemical cycles within ecosystems; describes the chemical reactions that occur in photosynthesis or the chemical reactions that occur in cellular respiration that result in the cycling of energy; describes how matter cycles or how energy flows through living systems or through the physical environment; describes dynamic equilibrium in organisms, populations, and ecosystems or describes the effect of equilibrium shifts • Identifies some of the cell parts and their functions; describes cells that are specialized into different tissues and organs; describes the processes of mitosis and meiosis; identifies that homeostatic balance occurs in cells or in organisms; identifies the components of macromolecules and some of the functions of the macromolecules active in biological systems; identifies the levels used in the modern classification system • Defines the theory of evolution; defines the theory of natural selection; identifies the structural properties of DNA and the role of DNA in heredity; identifies that genes are passed to offspring according to Mendel's laws of heredity; identifies chromosomal mutations and some of the possible causes and effects on genetic variation
Meets Proficiency	<ul style="list-style-type: none"> • Describes how a testable hypothesis may need to be revised to guide a further scientific investigation; designs an experiment, including the safe and appropriate use of tools and techniques to organize, analyze, and validate data; defends conclusions, explanations, and arguments that are supported by logic, scientific knowledge, and evidence from data; determines and describes connection(s) among hypotheses, scientific evidence, and conclusions; communicates all components of a scientific investigation, using appropriate techniques; engages in and explains the importance of peer review in science; revises, as needed, conclusions and explanations on the basis of new evidence; describes the principal reasons for ethics and integrity in scientific investigation; explains how a set of established criteria must be met for scientific explanations to be considered valid • Explains how scientific advancements and emerging technology have influenced society; compares the risks and benefits of potential solutions to technological issues • Describes biogeochemical cycles within ecosystems; explains the chemical reactions that occur in photosynthesis and cellular respiration that result in the cycling of energy; explains how matter cycles and energy flows through living systems and the physical environment; explains dynamic equilibrium in organisms, populations, and ecosystems; explains the effect of equilibrium shifts • Describes different cell parts and their functions; explains how cells are specialized into different tissues and organs; differentiates between the processes of mitosis and meiosis; describes how homeostatic balance occurs in cells and organisms; describes the functions and components of a variety of macromolecules active in biological systems; explains the organization of life on Earth using the modern classification system • Explains the theory of evolution and describes the evidence that supports it; explains the theory of natural selection; explains the structural properties of DNA and the role of DNA in protein synthesis and heredity; explains how Mendel's laws of heredity can be used to determine the traits of possible offspring; explains chromosomal mutations, possible causes, and their effect on genetic variation
Exceeds Proficiency	<ul style="list-style-type: none"> • Revises a testable hypothesis on the basis of new data to guide a further scientific investigation; evaluates the design of an experiment, including the safe and appropriate use of tools and techniques to organize, analyze, and validate data; defends conclusions, explanations, and arguments that are supported by logic, scientific knowledge, and evidence from data and suggests implications; justifies connection(s) and implications among hypotheses, scientific evidence, and conclusions; communicates, in detail, all components of a scientific investigation, using appropriate techniques; effectively participates in peer review and explains the principal and other relevant reasons for peer review in science; justifies conclusions and explanations on the basis of new evidence; explains and provides examples of the principal and other relevant reasons for ethics and integrity in scientific investigation; analyzes a scientific explanation to determine if it meets a set of established criteria • Evaluates a current scientific advancement or emerging technology and predicts its influence on society; analyzes the risks and benefits of potential solutions to technological issues and supports that perspective • Compares, through descriptions and illustrations, biogeochemical cycles within ecosystems; compares the chemical reactions that occur in photosynthesis and cellular respiration that result in the cycling of energy and explains the interrelationship that occurs between the two processes; illustrates and explains the cycling of matter and flow of energy through living systems and the physical environment and compares different energy pathways; explains and provides examples of dynamic equilibrium in organisms, populations, and ecosystems; compares the effect of equilibrium shifts • Explains the relationships among specific cell parts in key cellular processes; compares and explains how cells are specialized into different tissues and organs on the basis of function; compares the differences between mitosis and

	Hawai'i Biology I End-of-Course Performance Level Descriptors
	<p>meiosis and their roles in reproduction; explains how one homeostatic process affects another in maintaining balance in cells and organisms; explains how macromolecules interact in biological systems; justifies how to classify organisms that do not easily fit into the modern classification system</p> <ul style="list-style-type: none">• Explains the evolution of a present-day organism on the basis of molecular and anatomical evidence; uses the theory of natural selection to analyze the differences between related organisms; explains how changes in the structure of DNA can lead to changes in proteins and inherited traits; explains Mendel's laws of heredity and uses them to predict the traits of possible offspring; explains chromosomal mutations and possible causes and predicts the effects of a specific mutation on genetic variation in an organism or species