



**HSA-ALT GRADE 4 SCIENCE PERFORMANCE LEVEL DESCRIPTORS**

<b>Well Below Proficiency</b>	<ul style="list-style-type: none"><li>▪ Observes or handles tools, technology, and safety equipment</li><li>▪ Recognizes things in the environment and properties of objects by using the senses</li><li>▪ Recognizes earth materials and land forms</li><li>▪ Recognizes plants and animals</li><li>▪ Participates in an experiment by making simple observations (e.g., observing whether there are leaves on a plant)</li><li>▪ Recognizes a model or diagram</li><li>▪ Recognizes the sun as a source of heat and light</li><li>▪ Recognizes a model of the solar system</li></ul>
<b>Approaches Proficiency</b>	<ul style="list-style-type: none"><li>▪ Identifies tools and technology</li><li>▪ Identifies the content of a given model, differentiates parts within a model</li><li>▪ Identifies organisms in a food chain</li><li>▪ Identifies common reactions to external stimuli</li><li>▪ Identifies the behaviors of animals and their relationships with plants</li><li>▪ Identifies the structures of plants and animals</li><li>▪ Identifies the sun as a source of energy</li><li>▪ Identifies things that are living and things that are nonliving</li><li>▪ Makes observations of mixtures and reactions</li><li>▪ Identifies processes that can change land</li><li>▪ Identifies the Earth, moon, and sun when provided a model</li></ul>
<b>Meets Proficiency</b>	<ul style="list-style-type: none"><li>▪ Recognizes when a scientific experiment or investigation is needed to answer a question or solve a problem</li><li>▪ Identifies what should be measured during an investigation</li><li>▪ Identifies ways to show the results of an investigation</li><li>▪ Identifies the result of one variable within a bar graph</li><li>▪ Relates technology to its effect on the economy, demography, and/or environment</li><li>▪ Identifies tools used to make observations</li><li>▪ Observes and differentiates among physical characteristics</li><li>▪ Matches structures of plants and animals with function</li><li>▪ Identifies what animals need to survive</li><li>▪ Identifies things that harm an ecosystem</li><li>▪ Identifies what eats what in a habitat and the sources of energy when given a food chain</li></ul>



	<ul style="list-style-type: none"><li>▪ Identifies objects made of cells</li><li>▪ Understands and observes the effects of physical properties of objects</li><li>▪ Identifies what is produced by a common, observable reaction</li><li>▪ Identifies parts of circuits and the requirements to make a closed circuit</li><li>▪ Identifies simple machines</li><li>▪ Identifies gravity as a force, identifies the effect of gravity on objects</li><li>▪ Identifies Earth materials and their physical characteristics when provided images or actual objects</li><li>▪ Identifies how Earth processes reshape the land</li><li>▪ Identifies processes within the water cycle</li><li>▪ Compares the size of Earth to the moon and sun when provided a non-labeled model</li><li>▪ Identifies a structure of the human body</li><li>▪ Makes observations of objects based on physical properties and their actions by using the senses</li></ul>
<b>Exceeds Proficiency</b>	<ul style="list-style-type: none"><li>▪ Describes the use of variables, makes conclusions based on evidence, observations, or models</li><li>▪ Identifies and differentiates between renewable and nonrenewable sources of energy</li><li>▪ Classifies or describes the roles of organisms in an ecosystem when given examples or a diagram of a food web</li><li>▪ Identifies the function of a structure on the human body</li><li>▪ Identifies traits of organisms</li><li>▪ Describes the environmental conditions to which organisms are adapted</li><li>▪ Identifies the products of simple chemical reactions</li><li>▪ Identifies forms of energy, describes energy transformations and the effects of an energy transformation</li><li>▪ Identifies reflection and refraction</li><li>▪ Describes the advantage of using simple machines</li><li>▪ Identifies and describes the effect of gravity, understands the relationship between weight and gravity, understands gravity as a force</li><li>▪ Relates the orbital motions of the Earth, moon and sun, describes the motion of Earth, differentiates between rotation and revolution</li><li>▪ Describes the properties of objects in the solar system</li><li>▪ Identifies the causes of the reshaping of Earth's surface and materials, identifies the composition of earth materials</li><li>▪ Relates weather to the water cycle</li><li>▪ Identifies sources of energy in an ecosystem</li><li>▪ Identifies natural habitats as well as the living and nonliving components of a habitat</li><li>▪ Differentiates and compares plant and animal cells when given a diagram or model</li><li>▪ Differentiates among different types of physical properties that can be observed by the senses</li><li>▪ Gives an advantage and disadvantage to a piece of technology</li></ul>

**HSA-ALT GRADE 8 SCIENCE PERFORMANCE LEVEL DESCRIPTORS****Well Below Proficiency**

- Observes or identifies the parts of a model
- Recognizes tools and technology
- Participates in a demonstration of a natural phenomenon (e.g., a mechanical wave, the effect of gravity on a falling ball)
- Participates in an experiment or investigation (e.g., looks at a chart or experimental setup)
- Recognizes that there are steps to an experiment or investigation
- Recognizes gravity as a cause of falling objects
- Recognizes earthquakes
- Recognizes land forms and bodies of water

**Approaches Proficiency**

- Identifies steps to completing an experiment or investigation
- Identifies the outcomes or results of an experiment or investigation
- Identifies an advantage or disadvantage of a technological device
- Identifies the information provided by a model
- Identifies how matter or energy transfer in an ecosystem
- Identifies healthy or unhealthy characteristics of an ecosystem
- Identifies parts of a cell when given a model or representation of a cell
- Identifies the relationship between organisms in an ecosystem
- Sorts organisms based on shared characteristics
- Identifies traits of organisms
- When presented with a change to a habitat, describes how one component of the habitat will be affected
- Identifies how humans and animals can impact an environment
- Observes mechanical waves
- Identifies sources of mechanical waves
- Observes the effects of light on objects
- Observes the effects of energy input and output including heat effects
- Identifies the periodic table and models of atoms
- Identifies the force of gravity, relates mass and gravity, compares the mass of two objects
- Identifies the effect of a force
- Identifies the effects of earthquakes
- Identifies the characteristics or differences among Earth materials, landforms, and bodies of water
- Describes or compares the planets within the solar system when given a model
- Recognizes that the continents move on plates



	<ul style="list-style-type: none"><li>▪ Identifies graphs and the parts of graphs</li><li>▪ Identifies that all organisms are made of cells</li><li>▪ Identifies the water cycle</li></ul>
<b>Meets Proficiency</b>	<ul style="list-style-type: none"><li>▪ Builds graphs from a provided data set</li><li>▪ Makes a conclusion based on results</li><li>▪ Completes a set of variables when given the setup of an investigation</li><li>▪ Identifies instruments required to complete an investigation</li><li>▪ Identifies the type of table or graph in which data should be collected and communicated</li><li>▪ Identifies scientific resources</li><li>▪ Describes the interaction between two organisms</li><li>▪ Identifies how matter or energy is transferred between two organisms</li><li>▪ Identifies healthy and unhealthy ecosystems</li><li>▪ Describes an adaptation that benefits certain organisms in a habitat</li><li>▪ Relates cell structures to function</li><li>▪ Identifies levels of organization within organisms</li><li>▪ Identifies the requirements for sexual reproduction</li><li>▪ Identifies inherited traits in organisms</li><li>▪ Describes a changing fossil record</li><li>▪ Identifies and describes the effects of earthquakes</li><li>▪ Understands the effect of heat transfer on objects and materials</li><li>▪ Compares the physical and chemical properties of substances</li><li>▪ Compares types of rocks</li><li>▪ Identifies physical properties of Earth's landforms</li><li>▪ Identifies parts and processes within the water cycle, relates weather components to the water cycle</li><li>▪ Describes the movements and characteristics of objects in the universe</li><li>▪ Identifies reflection and refraction</li><li>▪ Identifies properties and waves</li><li>▪ Identifies magnitude and direction of energy and forces</li><li>▪ Identifies the components of Earth's layers</li><li>▪ Differentiates among different bodies of water</li><li>▪ Identifies the cause of changing seasons and relates the seasons to the position of Earth in its revolution</li></ul>
<b>Exceeds</b>	<ul style="list-style-type: none"><li>▪ Differentiates among the different types of graphs, identifies and draws conclusions from different types of graphs</li></ul>



**Proficiency**

- Supports conclusions with evidence from an investigation, describes components of experimental design
- Describes the impact of technologies
- Describes the relationships among organisms and the matter and energy transfer in a food web
- Identifies the structure and functions of types of cells
- Sequences the levels of organization within an organism
- Classifies organisms
- Describes inherited traits as well as the diversity of organisms and the advantage of inherited traits and diversity
- Describes the effect of a changing environment on a population of organisms
- Identifies the effect of changing biotic and abiotic factors on an ecosystem
- Describes the advantage of an organism's body structure
- Identifies why objects appear to be a certain color
- Describes energy transformations and waves
- Identifies and compares the physical or chemical properties of a substance, relates matter to the periodic table
- Identifies and describes forces and their effects
- Compares the movement of warm vs. cold water
- Identifies and describes the properties and characteristics of oceans
- Compares types of rocks and processes in which they were formed
- Describes continental drift and its effects
- Describes the season of any location on Earth when provided a diagram

**HSA-ALT BIOLOGY PERFORMANCE LEVEL DESCRIPTORS**

<b>Well Below Proficiency</b>	<ul style="list-style-type: none"><li>▪ Responds to basic questions about an investigation</li><li>▪ Recognizes technology, safety equipment, and scientific instruments</li><li>▪ Handles or observes the use of tools in an experiment or investigation</li><li>▪ Participates in a scientific investigation</li><li>▪ Recognizes familiar structures of plants and animals</li><li>▪ Makes an observation of a biogeochemical process</li><li>▪ Categorizes plants and animals</li><li>▪ Recognizes living and nonliving parts of ecosystems</li></ul>
<b>Approaches Proficiency</b>	<ul style="list-style-type: none"><li>▪ Identifies safety equipment and describes safe behavior and rules in a science classroom</li><li>▪ Communicates information from an investigation, chooses conclusions based on results</li><li>▪ Matches a type of technology to its purpose, describes the impact of a type of technology on society</li><li>▪ Identifies biogeochemical cycles observed in everyday life</li><li>▪ Identifies the processes of photosynthesis and respiration</li><li>▪ Identifies how matter and energy move in an ecosystem</li><li>▪ Identifies biotic and abiotic components of an ecosystem</li><li>▪ Identifies part of cells</li><li>▪ Recognizes an organ system</li><li>▪ Identifies the behaviors of other organisms to external stimuli, describes the involuntary reactions to internal stimuli, identifies behaviors that provide internal stability</li><li>▪ Identifies macromolecules</li><li>▪ Identifies kingdoms</li><li>▪ Compares modern organisms to their ancestors, identifies examples of evolution and genetic variation, identifies the purpose of studying fossils</li><li>▪ Identifies the traits and characteristics that allow organisms to survive in certain habitats</li><li>▪ Identifies DNA and the purpose of Punnett squares</li><li>▪ Identifies the roles of organisms when given a food web</li></ul>
<b>Meets Proficiency</b>	<ul style="list-style-type: none"><li>▪ Completes the setup of a scientific experiment or investigation by choosing both the controlled and independent variables</li><li>▪ Identifies the instruments needed in an investigation</li><li>▪ Identifies the conclusion of an investigation, provides evidence to support a conclusion</li><li>▪ Compares investigations</li><li>▪ Identifies ethical and unethical behavior and characteristics of a valid experiment</li></ul>



	<ul style="list-style-type: none"><li>▪ Describes the purpose, risks, and benefits of a technological device</li><li>▪ Identifies processes within biogeochemical processes and the cycling of matter and energy</li><li>▪ Identifies factors that affect the dynamic equilibrium of an ecosystem</li><li>▪ Identifies reactions to stimuli</li><li>▪ Describes the characteristics of various roles within an ecosystem</li><li>▪ Identifies sources of energy in a food web</li><li>▪ Describes factors that affect populations of organisms in a food web</li><li>▪ Orders the hierarchy of the modern classification systems</li><li>▪ Identifies the function and components of systems, identifies the functions of organs Describes the contribution of traits to the survival of organisms in a particular habitat</li><li>▪ Identifies the structure, function, and purpose of DNA, identifies how DNA is transferred between generations, identifies heritable traits</li><li>▪ Creates a Punnett square, following a model</li><li>▪ Distinguishes between harmful and beneficial mutations</li><li>▪ Relates the conclusion of an experiment to a given hypothesis</li><li>▪ Identifies the purpose of photosynthesis and respiration</li></ul>
<b>Exceeds Proficiency</b>	<ul style="list-style-type: none"><li>▪ Develops a hypothesis and creates or revises an experiment or investigation</li><li>▪ Identifies reliable sources of scientific information</li><li>▪ Identifies the data that should be collected during scientific experiments or investigations</li><li>▪ Identifies tools and methods of data collection that increase precision and accuracy</li><li>▪ Identifies ways to improve reproducibility in experiments</li><li>▪ Relates technology to an advancement in science; compares risks and benefits of technology</li><li>▪ Recognizes the importance of peer review</li><li>▪ Defines independent, dependent, and controlled variables</li><li>▪ Describes how to use data to communicate results</li><li>▪ Analyzes the results of more than one data set and draws a conclusion</li><li>▪ Applies the results of an experiment to solve a given problem</li><li>▪ Identifies the components of a biogeochemical cycle</li><li>▪ Compares the reactants and products of photosynthesis and respiration</li><li>▪ Identifies the structures of cells required to complete respiration and photosynthesis, identifies and describes the functions of organelles</li><li>▪ Describes cell division when given a model</li><li>▪ Describes macromolecules and their functions</li><li>▪ Sorts organisms into kingdoms based on observable characteristics</li><li>▪ Describes causes of evolution, describes the survival of organisms in an environment</li></ul>



- Determines recessive or dominant traits when provided the complete Punnett square
  - Describes causes or effects of mutated cells
  - Describes the effects of changing populations within a food web
  - Matches specialized cells to their organs or systems, identifies the functions of specialized cells
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