**Colorado Alternate Assessment**

**(Based on the 2020 Colorado Academic Standards)**

# Science Assessment Framework (starting in 2023) High School

Concepts and skills explicitly identified in the Colorado Academic Standards (CAS) are the basis for the Colorado Alternate Assessment (CoAlt) assessment. CoAlt Science Frameworks list the percentage representation and number of score points for each standards area that appears on the summative assessments. The relative weight across standards is based on the number and depth of the Extended Evidence Outcomes within the standard. The Frameworks also specify the Prepared Graduates, Grade Level Expectations, and Extended Evidence Outcomes that are included on the state assessments. Each Prepared Graduate will be represented on the assessment each year.

Colorado's 2020 Science Standards support a three-dimensional model of science teaching and learning. Items on the Colorado Alternate Assessment may be one, two or three dimensional.

## The Three Dimensions of Science Teaching and Learning – High School 2020 Colorado Academic Standards with Extended Evidence Outcomes

### Disciplinary Core Ideas

The Disciplinary Core Ideas (DCIs) form the basis for the content that students are expected to know by the end of the grade band and are present in every item.

All Disciplinary Core Ideas are included in the High School standards. They are listed below, with their numerical association as listed in the 2020 Colorado Extended Evidence Outcomes Document.

Physical Science: Students know and understand common properties, forms, and changes in matter and energy.

PS1 Matter and Its Interactions

PS2 Motion and Stability: Forces and Interactions

PS3 Energy

PS4 Waves and Their Applications in Technologies for Information Transfer

Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.

LS1 From Molecules to Organisms: Structures and Processes

LS2 Ecosystems: Interactions, Energy, and Dynamics

LS3 Heredity: Inheritance and Variation of Traits

LS4 Biological Evolution: Unity and Diversity

*Earth and Space Science:* Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space.

ESS1 Earth's Place in the Universe

ESS2 Earth's Systems

ESS3 Earth and Human Activity

**Science and Engineering Practices**

The Science and Engineering Practices (SEPs) in the CAS are interwoven within certain items, and all SEPs found in the High School standards are tested according to the SEP progressions.

All Science and Engineering Practices are included in the High School standards. They are listed below, with their numerical association as listed in the 2020 Colorado Extended Evidence Outcomes Document.

1. Asking questions (for science) and defining problems (for engineering)

2. Developing and using models

3. Planning and carrying out investigations

4. Analyzing and interpreting data

5. Using mathematics and computational thinking

6. Constructing explanations (for science) and designing solutions (for engineering)

7. Engaging in argument from evidence

8. Obtaining, evaluating, and communicating information

**Cross Cutting Concepts**

Crosscutting concepts (CCCs) have applications across all domains of science. As such, they are a way of linking the different domains of science. The CCCs in the CAS are interwoven within certain items. Each CCC found in the High School standards is assessed according to the CCC progressions.

All Cross Cutting Concepts are included in the High School standards. They are listed below, with their numerical association as listed in the 2020 Colorado Extended Evidence Outcomes Document.

1. Patterns. Observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them.

2. Cause and effect: Mechanism and explanation. Events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts.

3. Scale, proportion, and quantity. In considering phenomena, it is critical to recognize what is relevant at different measures of size, time, and energy and to recognize how changes in scale, proportion, or quantity affect a system's structure or performance.

4. Systems and system models. Defining the system under study—specifying its boundaries and making explicit a model of that system—provides tools for understanding and testing ideas that are applicable throughout science and engineering.

5. Energy and matter: Flows, cycles, and conservation. Tracking fluxes of energy and matter into, out of, and within systems helps one understand the systems' possibilities and limitations.

6. Structure and function. The way in which an object or living thing is shaped and its substructure determine many of its properties and functions.

7. Stability and change. For natural and built systems alike, conditions of stability and determinants of rates of change or evolution of a system are critical elements of study.

## Scenarios for Items

Items are driven by high-quality scenarios that are grounded in phenomena or problems. All scenarios are puzzling and intriguing and are explainable using grade appropriate integration of the three dimensions of the 2020 CAS. Scenarios are presented in two different ways: clusters, and standalone items.

*Clusters*: Students are presented with background information and still images and asked to make sense of the phenomenon described using their knowledge of the 2020 CAS Extended Evidence Outcomes. The first item in the cluster will have three answer options and be one dimensional testing the DCI only. The second item in the cluster will typically have three answer options and be two dimensional. The third item in the cluster will have four answer options and be three dimensional.

*Standalone Items*: Students are presented with a unique phenomenon and asked to make sense of that phenomenon based on the information in the stimulus and answer the three dimensional question using their knowledge of the 2020 CAS Extended Evidence Outcomes.

Cluster scenarios comprise the majority of the assessment, as students are asked to make sense of a larger phenomenon and answer more questions associated with those scenarios. Standalone items are included only to target a small number of 2020 CAS Extended Evidence Outcomes not represented in cluster scenarios, and these Extended Evidence Outcomes rotate on an annual basis.

## Item Types

Items associated with grounding phenomena are presented in two different ways.

*Selected Response (3SR):* For multiple choice items, students utilize information from the stimulus to make sense of the phenomenon and select a correct answer out of 3 or 4 provided choices.

*Supported Performance Tasks (SPT):* require students to complete a chart or graphic. Students use option cards to respond to three related prompts for each item. Students may manipulate the option cards independently or indicate the desired placement to the Test Administrators through their preferred mode of expressive communication, such as verbal direction or eye gaze. This item type allows students to demonstrate their knowledge and skills to create a product, revealing a different level of understanding of specific concepts and skills than that which are demonstrated through Selected Response items alone.

| Colorado Academic Standards 2020 with Extended Evidence Outcomes<br>Alternate Assessment (CoAlt)<br>Science Grade HS | % of Total Test Score Points | Targeted Points | |
|---|---|---|---|
| | | 3SR | SPT |
| **Physical Science** | **38-40** | **15-16** | **3** |
| **Prepared Graduate 1. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding structure, properties and interactions of matter.** | | | |
| **Grade Level Expectation: HS.1.1 The sub-atomic structural model and interactions between electric charges at the atomic scale can be used to explain the structure and interactions of matter.**<br>**Extended Evidence Outcomes:**<br>a. Use at least the first 20 elements of the periodic table to identify properties of groups and families and uses of commonly found elements.<br>b. Collaborate with peers to explore how the structure of a substance impacts the properties of a substance (e.g., melting point, boiling point).<br>c. Develop a model to illustrate how changes in temperature show evidence of energy transfer in a chemical reaction (e.g., hand warmers, ice pack, salt on ice/snow, video of fireworks exploding, salt to make ice cream).<br>**Grade Level Expectation: HS.1.2 Chemical processes, their rates, their outcomes, and whether or not energy is stored or released can be understood in terms of collisions of molecules, rearrangement of atoms, and changes in energy as determined by properties of elements involved.**<br>**Extended Evidence Outcomes:**<br>a. Develop a model to represent at least three simple chemical reactions (e.g., sodium and chlorine [NaCl], carbon and oxygen [CO2], hydrogen and oxygen [H2O]).<br>b. Develop a model to illustrate how changes in temperature show evidence of energy transfer in a chemical reaction (e.g., hand warmers, ice pack, salt on ice/snow, video of fireworks exploding, salt to make ice cream).<br>c. Use evidence (e.g., temperature, concentration, rate), to describe the effects of changing the temperature or concentration of the two reacting particles on the rate at which a reaction occurs.<br>d. Investigate with peers the relationship between changes in experimental conditions (e.g., temperature, amount of reactant) and an increased amount of product as a result of a chemical reaction.<br>e. Use a mathematical representation (e.g., table, graph, pictorial depictions) to show that mass is conserved during a chemical reaction. | | | |

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| **Grade Level Expectation: HS.1.3 The strong nuclear interaction provides the primary force that holds nuclei together. Nuclear processes including fusion, fission, and radioactive decays of unstable nuclei involve changes in nuclear binding energies.**<br>**Extended Evidence Outcomes:**<br>a. Illustrate the composition of the nucleus and energy released for at least one of the following: nuclear fission, nuclear fusion, and radioactive decay. | | | |
| **Prepared Graduate 2. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding interactions between objects and within systems of objects.** | | | |
| **Grade Level Expectation: HS.1.4 Newton's second law and the conservation of momentum can be used to predict changes in the motion of macroscopic objects.**<br>**Extended Evidence Outcomes:**<br>a. Use data from an investigation to identify the relationship between mass, force and acceleration.<br>b. Use data from an investigation to identify the relationship between the mass and speed of two colliding objects demonstrating conservation of momentum.<br>c. Compare and evaluate designs that minimize the force on an object during a collision.<br>**Grade Level Expectation: HS.1.5 Forces at a distance are explained by fields that can transfer energy and can be described in terms of the arrangement and properties of the interacting objects and the distance between them.**<br>**Extended Evidence Outcomes:**<br>a. Use data from an investigation or simulation to predict the relationship between two objects of different masses (Newton's Law of Gravitation) and two charged objects (Coulomb's Law).<br>b. Participate in an investigation demonstrating the use of an electric current to produce a magnetic field (e.g., household appliances, cell phones).<br>c. Gather evidence about the properties/molecular level structure of materials commonly used in industry such as conductive materials/metals, and plastics/polymers (e.g., why we use copper to make wire, why does plastic mold into different shapes and forms). | | | |

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| **Prepared Graduate 3. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how energy is transferred and conserved.** | | | |
| **Grade Level Expectation: HS.1.6 Energy is a quantitative property of a system that depends on the motion and interactions of matter and radiation within that system.**<br>**Extended Evidence Outcomes:**<br>a. Use data from an investigation to determine the relationship between changes in energy and the impact on the components of a system.<br>b. Develop or use models to illustrate the conversion of kinetic energy to thermal energy.<br>c. Collaborate with others to design, build, or identify features of a device showing the transformations of energy that occur (e.g., dams, solar cells, solar oven, ice cream maker, wind turbines, Rube Goldberg).<br>**Grade Level Expectation: HS.1.7 Energy cannot be created or destroyed, but it can be transported from one place to another and transferred between systems.**<br>**Extended Evidence Outcomes:**<br>a. Create an equation to show the change in energy of one component of a system when the energy of another component changes.<br>b. Produce data to show evidence of uniform thermal energy distribution with the results from mixing two liquids at different initial temperatures.<br>**Grade Level Expectation: HS.1.8 Force fields (gravitational, electric, and magnetic) contain energy and can transmit energy across space from one object to another.**<br>**Extended Evidence Outcomes:**<br>a. Develop or use a model (e.g., drawing, diagram) to show the cause and effect relationship between forces produced by electric or magnetic fields.<br>**Grade Level Expectation: HS.1.9 Although energy cannot be destroyed, it can be converted to less useful forms as it is captured, stored and transferred.**<br>**Extended Evidence Outcomes:**<br>a. Design, build, or identify a device that converts one form of energy into another form of energy.<br>b. Collaborate in an investigation to explore the transfer of thermal energy between two objects (e.g., hot and cold water interaction becomes warm). | | | |

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| **Prepared Graduate 4. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how waves are used to transfer energy and information.** | | | |
| **Grade Level Expectation: HS.1.10 Waves have characteristic properties and behaviors.**<br>**Extended Evidence Outcomes:**<br>a. Identify that the frequency, wavelength, and speed of waves can vary when traveling through various media.<br>b. Examine the advantages and disadvantages of using and storing digital information (e.g., copying music, using the internet for research, using computers, taking pictures on a cell phone).<br><br>**Grade Level Expectation: HS.1.11 Both an electromagnetic wave model and a photon model explain features of electromagnetic radiation broadly and describe common applications of electromagnetic radiation.**<br>**Extended Evidence Outcomes:**<br>a. Compare the wave model and particle model of electromagnetic radiation and determine which is more useful in given situations (e.g., diffraction is an example of a wave model and photoelectric effects are examples of a particle model).<br>b. Evaluate the validity of information about the effects of electromagnetic radiation on human (e.g., sunscreen, use of tanning beds, color perception related to frequency).<br>c. Gather and synthesize information from multiple sources about how a technological device uses waves to work (e.g., solar cells, cell phones, medical imaging).<br><br>**Grade Level Expectation: HS.1.12** Multiple technologies that are part of everyday experiences are based on waves and their interactions with matter<br>**Extended Evidence Outcomes:**<br>a. Create a model to show technology devices use waves to transmit and capture information and energy. | | | |

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| **Life Science** | **31** | **12** | **3** |
| **Prepared Graduate 5. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how individual organisms are configured and how these structures function to support life, growth, behavior and reproduction.** | | | |
| **Grade Level Expectation: HS.2.1 DNA codes for the complex hierarchical organization of systems that enable life's functions.**<br>**Extended Evidence Outcomes:**<br>a. Identify, based on evidence, how the structure of DNA determines the structure of proteins and how the DNA molecule helps different cells carry out essential life functions.<br>b. Develop a model to illustrate the function of an organ system (e.g., muscular, skeletal, digestive, nervous, respiratory, reproductive).<br>i. Identify common symptoms that show when a body system isn't functioning properly.<br>c. Use data from an investigation to identify different mechanisms a body uses to stay in balance during environmental changes (e.g., heart rate increases when exercising, sweating maintains body temperature).<br>**Grade level Expectation: HS.2.2 Growth and division of cells in complex organisms occurs by mitosis, which differentiates specific cell types.**<br>**Extended Evidence Outcomes:**<br>a. Use a model to show cells divide and multiply to allow organisms to grow.<br>**Grade level Expectation: HS.2.3 Organisms use matter and energy to live and grow.**<br>**Extended Evidence Outcomes:**<br>a. Illustrate the process of photosynthesis transforming light into energy for plants.<br>b. Explain how organisms use the simple elements that make up sugar molecules to combine with other elements to make up proteins necessary for life.<br>c. Illustrate how food and oxygen break down providing energy to the cells to sustain life's processes. | | | |

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| **Prepared Graduate 6. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how living systems interact with the biotic and abiotic environment.** | | | |
| **Grade Level Expectation: HS.2.4 Organisms and populations of organisms are dependent on their environmental interactions both with other living things and with nonliving. Organisms interact with the living and nonliving components of the environment to obtain matter and energy.**<br>**Extended Evidence Outcomes:**<br>a. Use a graphical representation to show how changes in resources in an environment affect the organisms living there.<br>b. Use mathematical representations (e.g., trends, averages, graphs) to identify changes in an animal population when conditions in their environment change (e.g., availability of food or shelter, increase in predators).<br>**Grade Level Expectation: HS.2.5 Matter and energy necessary for life are conserved as they move through ecosystems.**<br>**Extended Evidence Outcomes:**<br>a. Compare and contrast the use of oxygen and stored energy in aerobic and anaerobic environments.<br>b. Use a graphical representation to identify the changes in the amount of energy as it travels through an energy pyramid or food web.<br>c. Illustrate how carbon is cycled through an ecosystem, using a carbon cycle model.<br>**Grade Level Expectation: HS.2.6 A complex set of interactions determine how ecosystems respond to disturbances.**<br>**Extended Evidence Outcomes:**<br>a. Compare the changes to organism in an ecosystem in relatively stable conditions to the ecosystem after extreme events.<br>b. Collaborate with others to develop a way people can reduce the impacts of human activity (e.g., pollution, overhunting, introduction of invasive species) to help protect the Earth's environment and biodiversity. | | | |

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| **Grade Level Expectation: HS.2.7 Organisms interact in groups to benefit the species.**<br>**Extended Evidence Outcomes:**<br>a. Identify examples of the role of group behavior on individuals and species (e.g., animals and humans) and describe how these behaviors benefit or harm the species. | | | |
| **Prepared Graduate 7. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how genetic and environmental factors influence variation of organisms across generations.** | | | |
| **Prepared Graduate 8. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how natural selection drives biological evolution accounting for the unity and diversity of organisms.** | | | |
| **Grade Level Expectation: HS.2.8 The characteristics of one generation are dependent upon the genetic information inherited from previous generations.**<br>**Extended Evidence Outcomes:**<br>a. Ask questions about how DNA and chromosomes influence traits passed from parents and offspring.<br>**Grade Level Expectation: HS.2.9 Variation between individuals results from genetic and environmental factors.**<br>**Extended Evidence Outcomes:**<br>a. Use data (e.g., number of individuals with a specific trait) to identify the distribution (number) of the trait within a population.<br>b. Describe/define factors that cause genetic variations.<br>**Grade Level Expectation: HS.2.10 Evidence of common ancestry and diversity between species can be determined by examining variations including genetic, anatomical and physiological differences.**<br>**Extended Evidence Outcomes:**<br>a. Use evidence of similar anatomical structures to explain common ancestry and the evolution of a species (e.g., DNA sequencing, embryology).<br>**Grade Level Expectation: HS.2.11. Genetic variation among organisms affects survival and reproduction.**<br>**Extended Evidence Outcomes:**<br>a. Provide evidence that the process of evolution primarily results from four factors.<br>b. Use mathematical representations to represent how organisms with advantageous heritable traits tend to increase in proportion to organisms lacking this trait (e.g., population traits and numbers over time). | | | |

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| **Grade Level Expectation: HS.2.12 The environment influences survival and reproduction of organisms over multiple generations.**<br>**Extended Evidence Outcomes:**<br>a. Use evidence to explain how changes in the environment over time have driven adaptations of living things.<br>b. Identify or interpret evidence that shows that changes in the environmental conditions result in:<br>i. Increase in the number of some species.<br>ii. The emergence of new species.<br>iii. The extinction of other species.<br>**Grade Level Expectation: HS.2.13 Humans have complex interactions with ecosystems and have the ability to influence biodiversity on the planet.**<br>**Extended Evidence Outcomes:**<br>a. Propose a solution to protect a threatened or endangered species. | | | |
| **Earth and Space Science** | **29-31** | **11-12** | **3** |
| **Prepared Graduate 9. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding the universe and Earth's place in it.** | | | |
| **Grade Level Expectation: HS.3.1 All stars, including the sun, undergo stellar evolution, and the study of stars' light spectra and brightness is used to identify compositional elements of stars, their movements, and their distances from Earth.**<br>**Extended Evidence Outcomes:**<br>a. Develop a model to:<br>i. Illustrate how energy from the sun's core reaches the Earth.<br>ii. Explain the life cycle of the sun.<br>b. Demonstrate that the universe is expanding (the Big Bang Theory) using evidence of astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.<br>c. Explain ideas about the way stars, over their life cycle, produce elements (e.g., match a star of a specific relative mass with its life cycle)<br>**Grade Level Expectation: HS.3.2 Explanations of and predictions about the motions of orbiting objects are described by the laws of physics.**<br>**Extended Evidence Outcomes:**<br>a. Create a table representing the patterns of orbiting objects in the solar system (e.g., the number of days it takes planets to orbit the sun, predict how a satellite or other man made object would travel around the Earth). | | | |

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| **Grade Level Expectation: HS.3.3 The rock record resulting from tectonic and other geoscience processes as well as objects from the solar system can provide evidence of Earth's early history and the relative ages of major geologic formations.**<br>**Extended Evidence Outcomes:**<br>a. Evaluate past and current movements of plate boundaries in order to explain the ages of crystal rock (e.g., convergent, divergent, transform).<br>b. Describe how scientists use evidence from within the solar system to reconstruct the early history of Earth. | | | |
| **Prepared Graduate 10. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how and why Earth is constantly changing.** | | | |
| **Grade Level Expectation: HS.3.4 Earth's systems, being dynamic and interacting, cause feedback effects that can increase or decrease the original changes, and these effects occur on different time scales, from sudden (e.g., volcanic ash clouds) to intermediate (ice ages) to very long-term tectonic cycles.**<br>**Extended Evidence Outcomes:**<br>a. Create a model to demonstrate the relationship between Earth's internal and external processes and the changes that occur on the Earth's surface resulting in continental and ocean floor features.<br>b. Examine connections between Earth systems (causes and effects) using data (graph, table) to compare the changes in one aspect of the Earth's surface to another aspect of the Earth's surface (e.g., loss of ground vegetation causes increase in water runoff and soil erosion, increase in greenhouse gases causes a rise in global temperatures that melts ice).<br>c. Develop or use a model to show how the movement of tectonic plates is part of the cycles of convection in the Earth's mantle (e.g., less dense material rises and more dense material sinks).<br>d. Use a timeline to illustrate the causes of climate change by timescale (e.g., 1-10 years: large volcanic eruptions; 10-100s of years: changes in human activity; 10-100s of thousands of years: changes to Earth's orbit).<br>**Grade Level Expectation: HS.3.5 Plate tectonics can be viewed as the surface expression of mantle convection, which is driven by heat from radioactive decay within Earth's crust and mantle.**<br>**Extended Evidence Outcomes:**<br>a. Develop a model to illustrate the similarities of the features of the Earth' surface and the ocean floor and the forces that created them.<br>b. Use a model to illustrate the composition of Earth's layers. | | | |

| Colorado Academic Standards 2020 with Extended Evidence Outcomes<br>Alternate Assessment (CoAlt)<br>Science Grade HS | % of Total Test Score Points | Targeted Points | |
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| | | 3SR | SPT |
| **Grade Level Expectation: HS.3.6 The planet's dynamics are greatly influenced by water's unique chemical and physical properties.**<br>**Extended Evidence Outcomes:**<br>a. Identify the effects of water on the Earth's surface, including stream transportation, and erosion, and frost wedging.<br><br>**Grade Level Expectation: HS.3.7 The role of radiation from the sun and its interactions with the atmosphere, ocean, and land are the foundation for the global climate system. Global climate models are used to predict future changes, including changes influenced by human behavior and natural factors.**<br>**Extended Evidence Outcomes:**<br>a. Examine connections between Earth systems (causes and effects) using data (graph, table) to compare the changes in one aspect of the Earth's surface to another aspect of the Earth's surface (e.g., loss of ground vegetation causes increase in water runoff and soil erosion, increase in greenhouse gases causes a rise in global temperatures that melts ice).<br>b. Use a model of Earth's rotation, orbit and tilt, describe how the amount of energy (e.g., the sun) in and out of Earth systems changes based on these factors and creates different climates.<br>i. Describe the effect on surface temperature, precipitation patterns, sea levels and biosphere distribution of different amounts of energy (i.e., the Sun) going in and out of Earth systems.<br>c. Use a qualitative carbon cycle model, describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.<br>**Grade Level Expectation: HS.3.8. The biosphere and Earth's other systems have many interconnections that cause a continual co-evolution of Earth's surface and life on it.**<br>**Extended Evidence Outcomes:**<br>a. Create a timeline comparing the evolution of the Earth's biosphere (e.g., surface, atmosphere and hydrosphere) and the evolution of living organisms. | | | |
| **Prepared Graduate 11. Students can use the full range of science and engineering practices to make sense of natural phenomena and solve problems that require understanding how human activities and the Earth's surface processes interact.** | | | |
| **Grade Level Expectation: HS.3.9 Resource availability has guided the development of human society and use of natural resources has associated costs, risks, and benefits.**<br>**Extended Evidence Outcomes:**<br>a. Using evidence (e.g., graphs, tables, anecdotal information) identify how the availability of natural resources and the occurrence of natural hazards (e.g., volcanos, earthquakes, tsunamis) impacts human activity. | | | |

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| | | 3SR | SPT |
| b. Compare the most cost-effective solution for conserving, recycling, and reusing energy and mineral resources. | | | |
| **Grade Level Expectation: HS.3.10 Natural hazards and other geological events have shaped the course of human history at local, regional, and global scales.**<br>**Extended Evidence Outcomes:**<br>a. Using evidence (e.g., graphs, tables, anecdotal information) identify how the availability of natural resources and the occurrence of natural hazards (e.g., volcanos, earthquakes, tsunamis) impacts human activity.<br>**Grade Level Expectation: HS.3.11 Sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources, including the development of technologies.**<br>**Extended Evidence Outcomes:**<br>a. Create a representation (e.g., graphical, computational simulation, model) to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity).<br>b. Evaluate a solution to reduce the impact of human activities on natural systems (e.g., conserving, reusing, recycling). | | | |
| | **100** | **39** | **9** |

| Item Types | % of Total Test Score Points | Targeted Points |
|---|---|---|
| **3SR** | **81** | **39** |
| **SPT** | **19** | **9** |
| | **100** | **48** |