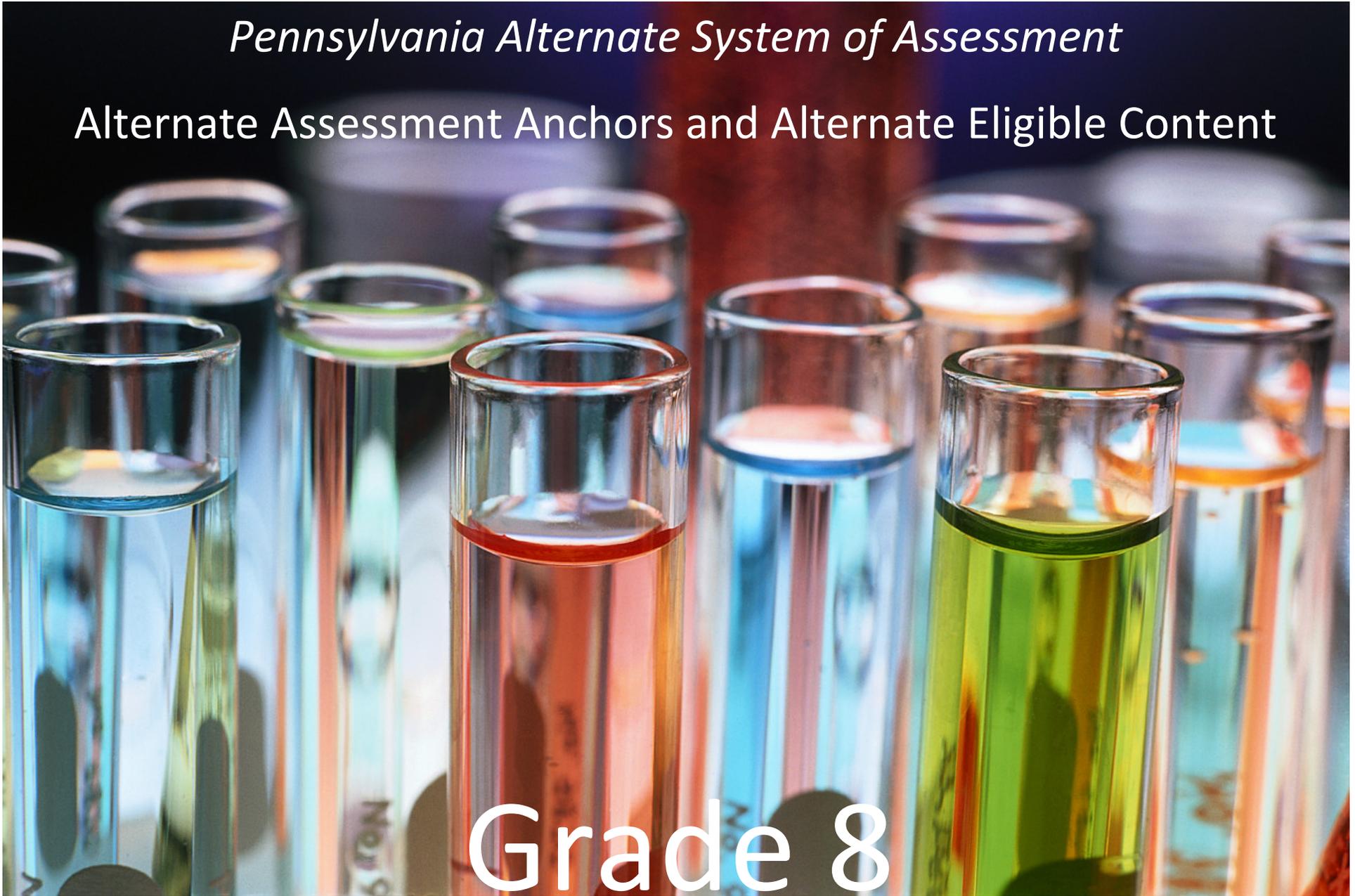


*Pennsylvania Alternate System of Assessment*

Alternate Assessment Anchors and Alternate Eligible Content

Grade 8



S8.A.1 Reason and Analysis		
ALTERNATE ASSESSMENT ANCHOR	ALTERNATE ELIGIBLE CONTENT	EXAMPLE
ASSESSMENT ANCHOR	ELIGIBLE CONTENT	EXAMPLE
<p><b>S8.A.1.1</b> Explain, interpret and apply scientific, environmental, or technological knowledge presented in a variety of formats (e.g., visuals, scenarios, graphs).</p> <p><i>Reference: 3.2.7.A, 3.2.7.B</i></p> <p><b>S8.A.1.2</b> Identify and explain the impacts of applying scientific, environmental, or technological knowledge to address solution to practical problems.</p> <p><i>Reference: 3.2.7.C, 3.8.7.A, 3.8.7.B, 4.3.7.A</i></p> <p><b>S8.A.1.3</b> Identify evidence that certain variables may have caused measurable changes in natural or human-made-systems.</p> <p><i>Reference: 3.1.7.E, 4.7.7.C, 4.8.7.C</i></p>	<p><b>S8.A.1.1.1</b> Distinguish between a scientific theory and an opinion, explaining how a theory is supported with evidence, or how new data/information may change existing theories and practice.</p> <p><b>S8.A.1.1.2</b> Explain how certain questions can be answered through scientific inquiry and/or technological design.</p> <p><b>S8.A.1.1.3</b> Use evidence, such as observations or experimental results, to support inferences about a relationship.</p> <p><b>S8.A.1.1.4</b> Develop descriptions, explanations, predictions, and models using evidence.</p> <p><b>S8.A.1.2.1</b> Describe the positive and negative, intended and unintended, effects of specific scientific results or technological developments.(e.g., air/space travel, genetic engineering, nuclear fission/fusion, artificial intelligence, lasers, organ transplants)</p> <p><b>S8.A.1.2.2</b> Identify environmental issues and explain their potential long-term health effects (e.g., pollution, pest controls, vaccinations).</p>	

	<p><b>S8.A.1.2.3</b> Describe fundamental scientific or technological concepts that could solve practical problems.(e.g., Newton’s Laws of motion, Mendelian genetics, mechanical advantage)</p> <p><b>S8.A.1.2.4</b> Explain society’s standard of living in terms of technological advancements and their impact on agriculture. (e.g., transportation, processing, production, storage)</p> <p><b>S8.A.1.3.1</b> Use ratio to describe change (e.g., percents, parts per million, grams per cubic centimeter).</p> <p><b>S8.A.1.3.2</b> Use evidence, observations, or explanations to make inferences about change in systems over time (e.g., carrying capacity, succession, population dynamics, loss of mass in chemical reactions, indicator fossils in geologic time scale) and the variables affecting these changes.</p> <p><b>S8.A.1.3.3</b> Examine systems changing over time, identifying the possible variables causing this change, and drawing inferences about how these variables affect this change.</p> <p><b>S8.A.1.3.4</b> Given a scenario, explain how a dynamically changing environment provides for the sustainability of living systems.</p>	
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**S8.A The Nature of Science**

**Reporting Category**

<b>S8.A.2 Processes, Procedures and Tools of Scientific Investigations</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.A.2.2</b> Identify appropriate instruments for a specific purpose and describe how technology extends human abilities.</p>	<p><b>S8.A.2.2.1</b> Identify possible advantages/disadvantages of technologies.</p>	<p><b>S8.A.2.2.1</b> Selects picture of tool based on advantage – all choices are used to perform the same basic function.</p> <p><b>S8.A.2.2.1</b> Describes 1 advantage/disadvantage a new technology has over other tools that perform the same basic function.</p> <p><b>S8.A.2.2.1</b> Names 1 advantage/disadvantage of a new technology.</p>
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.A.2.1</b> Apply knowledge of scientific investigation or technological design in different contexts to make inferences to solve problems.</p> <p><i>Reference: 3.2.7.B, 3.1.7.C, 3.1.7.D</i></p> <p><b>S8.A.2.2</b> Apply appropriate instruments for a specific purpose and describe the information the instrument can provide.</p> <p><i>Reference: 3.3.7.A, 3.7.7.B, 3.1.7.D</i></p>	<p><b>S8.A.2.1.1</b> Use evidence, observations, or a variety of scales (e.g., time, mass, distance, volume, temperature) to describe relationships.</p> <p><b>S8.A.2.1.2</b> Use space/time relationships, define concepts operationally, raise testable questions, or formulate hypotheses.</p> <p><b>S8.A.2.1.3</b> Design a controlled experiment by specifying how the independent variables will be manipulated, how the dependent variable will be measured, and which variables will be held constant.</p> <p><b>S8.A.2.1.4</b> Interpret data/observations; develop relationships among variables based on data/observations to design models as solutions.</p> <p><b>S8.A.2.1.5</b> Use evidence from investigations to clearly communicate and support conclusions.</p> <p><b>S8.A.2.1.6</b> Identify a design flaw in a simple technological system and devise possible</p>	

	<p>working solutions.</p> <p><b>S8.A.2.2.1</b> Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, or temperature safely under a variety of conditions.</p> <p><b>S8.A.2.2.2</b> Apply appropriate measurement systems (e.g., time, mass, distance, volume, temperature) to record and interpret observations under varying conditions.</p> <p><b>S8.A.2.2.3</b> Describe ways technology extends and enhances human abilities for specific purposes (e.g., microscope, telescope, micrometer, hydraulics, barometer).</p>	
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**S8.A The Nature of Science**

**Reporting Category**

<b>S8.A.3 Systems, Models and Patterns</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.A.3.1</b> Describe the parts of a simple system, their roles, and their relationships to the system as a whole.</p>	<p><b>S8.A.3.1.1</b> Identify parts of a simple man-made system based on function.</p>	<p><b>S8.A.3.1.1</b> Selects object required to make a simple man-made system function.</p> <p><b>S8.A.3.1.1</b> Selects picture of a part from simple man-made system based on function named.</p> <p><b>S8.A.3.1.1</b> Describes function of a part from a man-made system.</p>
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.A.3.1</b> Explain the parts of a simple system, their roles, and their relationships to the system as a whole.</p> <p><i>Reference: 3.1.7.A, 3.4.7.B, 4.3.7.C, 4.2.7.D, 4.6.7.A</i></p> <p><b>S8.A.3.2</b> Apply knowledge of models to make predictions, draw inferences, or explain technological concepts.</p> <p><i>Reference: 3.1.7.B, 3.2.7.B, 4.1.7.B</i></p> <p><b>S8.A.3.3</b> Describe repeated processes or recurring elements in scientific and technological patterns.</p> <p><i>Reference: 3.1.7.C, 3.2.7.B</i></p>	<p><b>S8.A.3.1.1</b> Describe a system (e.g., watershed, circulatory system, heating system, agricultural system) as a group of related parts with specific roles that works together to achieve an observed result.</p> <p><b>S8.A.3.1.2</b> Explain the concept of order in a system (e.g., first to last–manufacturing steps; trophic levels; simple to complex–cell, tissue, organ, organ system).</p> <p><b>S8.A.3.1.3</b> Distinguish between system inputs, system processes, system outputs, and feedback (e.g., physical, ecological, biological, informational).</p> <p><b>S8.A.3.1.4</b> Distinguish between open loop (e.g., energy flow, food web, open-switch) and closed loop (e.g., materials in the nitrogen and carbon cycles, closed-switch) systems.</p> <p><b>S8.A.3.1.5</b> Explain how components of a natural and human-made system play different roles in a working system.</p> <p><b>S8.A.3.2.1</b> Describe how scientists use models to explore</p>	

	<p>relationships in natural systems (such as an ecosystem, river system, or the solar system).</p> <p><b>S8.A.3.2.2</b> Describe how engineers use models to develop new and improved technologies to solve problems.</p> <p><b>S8.A.3.2.3</b> Given a model showing simple cause and effect relationships in a natural system, predict results that can be used to test the assumptions in the model. (e.g., photosynthesis, water cycle, diffusion, infiltration)</p> <p><b>S8.A.3.3.1</b> Identify and describe patterns as repeated processes or recurring elements in human-made systems (e.g., triangles in bridges, hub and spoke system in communications and transportation systems, feedback controls in regulated systems).</p> <p><b>S8.A.3.3.2</b> Describe repeating structure patterns in nature(e.g., veins in a leaf, tree rings, , crystals, water waves) or periodic patterns (e.g., daily, monthly, annually).</p>	
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**S8.B Biological Sciences**

**Reporting Category**

<b>S8.B.1 Structure and Function of Organisms</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.B.1.1</b> Identify and describe structural characteristics of living things and their diverse needs for survival.</p>	<p><b>S8.B.1.1.1</b> Identify the environment in which the animal or plant can survive.</p>	<p><b>S8.B.1.1.1</b> Selects picture of living organism that lives on land or in water.</p>
	<p><b>S8.B.1.1.2</b> Identify how multiple structures of a plant or animal work together to perform a function for survival of the organism in a given habitat.</p>	<p><b>S8.B.1.1.1</b> Selects picture of environment in which an organism lives.</p>
	<p><b>S8.B.1.1.3</b> Describe life cycles of plants and animals including both vertebrates (birds, mammals, reptiles and fish) and invertebrates (complete or incomplete metamorphosis of insects).</p>	<p><b>S8.B.1.1.1</b> Selects picture of an environment required for the survival of an animal named.</p>
		<p><b>S8.B.1.1.1</b> Describes 1 effect that habitat destruction has on the acquisition of basic needs.</p>
		<p><b>S8.B.1.1.2</b> Selects picture of structure based on function – all choices are from the same animal/plant.</p>
		<p><b>S8.B.1.1.2</b> Names 2 structures used to accomplish a task.</p>
		<p><b>S8.B.1.1.2</b> Describes 1 way in which an animal or person acquires basic needs.</p>
		<p><b>S8B.1.1.2</b> Names 2 structures required to accomplish a task.</p>
		<p><b>S8.B.1.1.3</b> Selects picture of next stage of life cycle – stages are substantially different in appearance.</p>
	<p><b>S8.B.1.1.3</b> Sequences 4 stages in the life cycle – stages are substantially different in appearance.</p>	
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.B.1.1</b> Describe and compare structural and functional similarities and differences that characterize diverse living things.</p>	<p><b>S8.B.1.1.1</b> Describe the structures of living things that help them function affectively in specific ways (e.g., adaptations and characteristics).</p>	

**S8.B Biological Sciences**

**Reporting Category**

<p><i>Reference: 3.3.7.A, 3.3.7.B, 4.6.7.A, 4.7.7.B</i></p>	<p><b>S8.B.1.1.2</b> Compare similarities or differences in both internal structures (e.g., invertebrate/vertebrate, vascular/nonvascular, single-celled/multi-celled, and external structures (e.g., appendages, body segments, type of covering, size, shape) of organisms.</p> <p><b>S8.B.1.1.3</b> Apply knowledge of characteristic structures to identify or categorize organisms (i.e., plants, animals, fungi, bacteria, and protista).</p> <p><b>S8.B.1.1.4</b> Identify the levels of organization from cell to organism and describe how specific structures (parts), which underlie larger systems, enable the system to function as a whole.</p>	
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**S8.B Biological Sciences**

**Reporting Category**

<b>S8.B.2 Continuity of Life</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.B.2.1</b> Explain the basic concepts of natural selection.</p> <p><i>Reference: 3.3.7.D, 4.7.7.A, 4.7.7.B</i></p> <p><b>S8.B.2.2</b> Explain how a set of genetic instructions determines inherited traits of organisms.</p> <p><i>Reference: 3.3.7.C</i></p>	<p><b>S8.B.2.1.1</b> Explain how inherited structures or behaviors help organisms survive and reproduce in different environments.</p> <p><b>S8.B.2.1.2</b> Explain how different adaptations in individuals of the same species may affect survivability or reproduction success.</p> <p><b>S8.B.2.1.3</b> Explain that mutations can alter a gene and are the original source of new variations.</p> <p><b>S8.B.2.1.4</b> Describe how selective breeding or biotechnology can change the genetic makeup of organisms.</p> <p><b>S8.B.2.1.5</b> Explain that adaptations are developed over long periods of time and are passed from one generation to another.</p> <p><b>S8.B.2.2.1</b> Identify and explain differences between inherited and acquired traits.</p> <p><b>S8.B.2.2.2</b> Recognize that the gene is the basic unit of inheritance, that there are dominant and recessive genes, that traits are inherited.</p>	

**S8.B Biological Sciences**

**Reporting Category**

<b>S8.B.3 Ecological Behavior and Systems</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.B.3.1</b> Identify the relationships among and between organisms in different groups.</p> <p><b>S8.B.3.2</b> Identify/Describe characteristics of different seasonal time periods.</p> <p><b>S8.B.3.3</b> Describe the effects of pollution on humans and wildlife within an ecosystem.</p> <p><b>S8.B.3.4</b> Identify/Describe the effects of improper food handling, preparation, and food storage on the safety of foods.</p>	<p><b>S8.B.3.1.1</b> Sort living things into exclusive groups based on common characteristics (plants, animals, mammals, amphibians, fish, etc.)</p> <p><b>S8.B.3.2.1</b> Identify effects of seasons on peoples' behavior and activities.</p> <p><b>S8.B.3.3.1</b> Identify direct effects of pollution on the environment.</p> <p><b>S8.B.3.4.1</b> Identify and/or describe safe food handling, preparation, and storage practices.</p>	<p><b>S8.B.3.1.1</b> Selects picture of a member of a kingdom named.</p> <p><b>S8.B.3.1.1</b> Completes a graphic organizer of two kingdoms – 2 hierarchical levels.</p> <p><b>S8.B.3.1.1</b> Completes a graphic organizer of 5 classes – 2 hierarchical levels with name of class provided.</p> <p><b>S8.B.3.2.1</b> Selects picture of season-neutral activity – 3 choices are season-specific activities.</p> <p><b>S8.B.3.2.1</b> Describes 2 characteristics of a season that permits an activity named.</p> <p><b>S8.B.3.3.1</b> Describes 1 effect of pollution on the environment.</p> <p><b>S8.B.3.3.1</b> Describes 1 effect of pollution on wildlife.</p> <p><b>S8.B.3.4.1</b> Selects picture of food that requires refrigeration.</p> <p><b>S8.B.3.4.1</b> Selects picture of food that does not require refrigeration.</p> <p><b>S8.B.3.4.1</b> Describes 1 consequence of unsafe food handling practices.</p> <p><b>S8.B.3.4.1</b> Describes 1 unsafe food handling/preparation practice in a scenario described.</p>
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.B.3.1</b> Explain the relationships among and between organisms in different ecosystems and their</p>	<p><b>S8.B.3.1.1</b> Explain the flow of energy through an ecosystem (e.g., food chains, food webs).</p>	

S8.B Biological Sciences

<p>abiotic and biotic components.</p> <p><i>Reference: 4.4.7.B, 4.6.7.A, 4.1.7.C, 4.1.7.D</i></p> <p><b>S8.B.3.2</b> Identify evidence of change to infer and explain the ways different variables may affect change in natural or human-made systems.</p> <p><i>Reference: 3.1.7.C, 4.3.7.B, 4.6.7.C, 4.8.7.D, 3.1.7.E, 4.3.7.C</i></p> <p><b>S8.B.3.3</b> Explain how renewable and non-renewable resources provide for human needs or how these needs impact the environment.</p> <p><i>Reference: 3.6.7.A, 4.4.7.A, 4.4.7.C, 4.5.7.C, 3.8.7.C</i></p>	<p><b>S8.B.3.1.2</b> Identify major biomes and describe abiotic and biotic components (e.g., abiotic: different soil types, air, water sunlight).</p> <p><b>S8.B.3.1.3</b> Explain relationships among organisms (e.g., producers/consumers, predator/prey, in an ecosystem).</p> <p><b>S8.B.3.2.1</b> Use evidence to explain factors that affect changes in populations (e.g., deforestation, disease, land use, natural disaster, invasive species).</p> <p><b>S8.B.3.2.2</b> Use evidence to explain how diversity affects the ecological integrity of natural systems.</p> <p><b>S8.B.3.2.3</b> Describe the response of organisms to environmental changes (e.g., changes in climate, hibernation, migration, coloration) and how those changes affect survival.</p> <p><b>S8.B.3.3.1</b> Explain how human activities may affect local, regional, and global environments.</p> <p><b>S8.B.3.3.2</b> Explain how renewable and nonrenewable resources provide for human needs (i.e., energy, food, water, clothing, and shelter).</p> <p><b>S8.B.3.3.3</b> Describe how waste management affects the environment (e.g., recycling, composting, landfills, incineration, sewage treatment).</p> <p><b>S8.B.3.3.4</b> Explain the long-term effects of using integrated pest management (e.g., herbicides,</p>	
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	natural predators, biogenetics) on the environment.	
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**S8.C Physical Sciences**

**Reporting Category**

<b>S8.C.1 Structure, Properties, and Interactions of Matter and Energy</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<b>S8.C.1.1</b> Describe the observable physical properties and the structure of matter.	<b>S8.C.1.1.1</b> Categorize objects according to two physical properties (size, shape, texture, thickness).	<b>S8.C.1.1.1</b> Matches 2 objects based on physical properties – choices differ on up to 3 attributes – target shares up to 2 attributes with the other choices.
	<b>S8.C.1.1.2</b> Identify and predict the change in the state of matter as a function of a change in temperature.	<b>S8.C.1.1.1</b> Creates 1 group based on 2 attributes named – initial set of 7 items differ on up to 3 attributes.
	<b>S8.C.1.1.3</b> Identify final product when items are combined resulting in a physical change and change in appearance.	<b>S8.C.1.1.1</b> Sorts 6 objects into 3 groups based on 2 attributes named – items differ on up to 3 attributes.
		<b>S8.C.1.1.2</b> Selects picture of item that is frozen or has melted.
		<b>S8.C.1.1.2</b> Selects item from a complex photograph based on the possibility of change in physical matter described.
		<b>S8.C.1.1.2</b> Describe 1 reason for maintaining a constant temperature to preserve a state of matter.
		<b>S8.C.1.1.2</b> Describes 1 reason an item remains in the same state of matter.
		<b>S8.C.1.1.3</b> Selects photograph of ingredient in a food item presented in a photograph – ingredient does not maintain its appearance.
		<b>S8.C.1.1.3</b> Names 2 ingredients used to make item pictured – ingredients do not maintain original appearance.
	<b>S8.C.1.1.3</b> Names item that can be prepared with the	

**S8.C Physical Sciences**

**Reporting Category**

<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	ingredients in the photographs. <b>EXAMPLE</b>
<p><b>S8.C.1.1</b> Explain concepts about the structure and properties (physical and chemical) of matter.</p> <p><i>Reference: 3.4.7.A</i></p>	<p><b>S8.C.1.1.1</b> Explain the differences among elements, compounds, and mixtures.</p> <p><b>S8.C.1.1.2</b> Use characteristic physical or chemical properties to distinguish one substance from another (e.g., density, thermal expansion/contraction, freezing/melting points, streak test).</p> <p><b>S8.C.1.1.3</b> Identify and describe reactants and products of simple chemical reactions.</p>	

**S8.C Physical Sciences**

**Reporting Category**

<b>S8.C.2 Forms, Sources, Conversion, and Transfer of Energy</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.C.2.1</b> Describe energy sources, transfer of energy, or conversion of energy.</p> <p><i>Reference: 3.4.7.B, 4.2.7.B</i></p> <p><b>S8.C.2.2</b> Compare the environmental impact of different energy sources chosen to support human endeavors.</p> <p><i>Reference: 3.4.7.B, 4.2.7.B</i></p>	<p><b>S8.C.2.1.1</b> Distinguish among forms of energy (e.g., electrical, mechanical, chemical, heat, light, sound, nuclear) and sources of energy (i.e., renewable and nonrenewable energy)</p> <p><b>S8.C.2.1.2</b> Explain how heat is transferred from one place to another through convection, conduction, or radiation.</p> <p><b>S8.C.2.1.3</b> Describe how one form of energy (e.g., electrical, mechanical, chemical, heat, light, sound, nuclear) can be converted into a different form of energy.</p> <p><b>S8.C.2.2.1</b> Describe the sun as a major source of energy that impacts on the environment.</p> <p><b>S8.C.2.2.2</b> Compare the time spans of renewability for fossil fuels and alternative fuels.</p> <p><b>S8.C.2.2.3</b> Describe the waste (quantity, kind, and potential to cause environmental impacts) derived from the use of renewable and nonrenewable energy sources and their potential impact on the environment.</p>	

**S8.C Physical Sciences**

**Reporting Category**

<b>S8.C.3 Principles of Motion and Force</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.C.3.1</b> Describe the effect of multiple forces on the movement, speed, or direction of an object.</p>	<p><b>S8.C.3.1.1</b> Identify the relationship between the force (push and pull) needed to move an object and the mass, surface, and incline.</p> <p><b>S8.C.3.1.2</b> Identify the speed, distance, or time an object travels, given two of the variables.</p>	<p><b>S8.C.3.1.1</b> Describes 1 reason for a problem in a scenario involving weight and force – scenario contains successful attempt and failed attempt.</p> <p><b>S8.C.3.1.1</b> Describes 1 reason for the difference in the force exerted to move an object – force is related to mass, surface, or slope.</p> <p><b>S8.C.3.1.2</b> Selects moving object/person that will arrive first/last from a 10-item, 1-variable display – speed shown.</p> <p><b>S8.C.3.1.2</b> Selects moving object or person that traveled the longest/shortest distance from a 15-item, 2-variable display – speed and duration shown.</p> <p><b>S8.C.3.1.2</b> Selects the fastest/slowest moving object or person from a 15-item, 2-variable display – duration and distance shown.</p>
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.C.3.1</b> Describe the effect of multiple forces on the movement, speed, or direction of an object.</p> <p><i>Reference: 3.4.7.C, 3.6.7.C</i></p>	<p><b>S8.C.3.1.1</b> Describe forces acting on objects (e.g., friction, gravity, balanced versus unbalanced, inertia, momentum).</p> <p><b>S8.C.3.1.2</b> Distinguish between kinetic and potential energy.</p> <p><b>S8.C.3.1.3</b> Explain that the mechanical advantages produced by simple machines helps to do work (physics) by either overcoming a force or changing the direction of the applied force.</p>	

**S8.D Earth and Space Sciences**

**Reporting Category**

<b>S8.D.1 Earth Features and Processes that Change Earth and Its Resources</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<b>S8.D.1.2</b> Describe the potential impact of human made processes on changes to Earth’s resources.	<b>S8.D.1.2.1</b> Identify natural resources used to manufacture processed foods/products.	<b>S8.D.1.2.1</b> Selects picture of source of food.
	<b>S8.D.1.2.2</b> Categorize recyclable objects.	<b>S8.D.1.2.1</b> Selects picture of source of processed food/product named.
	<b>S8.D.1.2.3</b> Describe how to conserve natural resources.	<b>S8.D.1.2.1</b> Matches 4 pictures of processed food/product with each of its sources.
		<b>S8.D.1.2.1</b> Names primary ingredient in processed food.
		<b>S8.D.1.2.2</b> Selects object that can be recycled based on composition named – 2 choices are recyclable.
		<b>S8.D.1.2.2</b> Selects category of picture of recyclable object based on similar composition – all choices are recyclable.
		<b>S8.D.1.2.2</b> Selects 2 items that can be recycled from a photograph
	<b>S8.D.1.2.2</b> Sorts 9 photographs into 4 disposal categories – choices include recyclable and non-recyclable objects.	
	<b>S8.D.1.2.3</b> Describes 1 way to conserve – example described.	
	<b>S8.D.1.2.3</b> Selects picture of person using most/least amount of a resource.	
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<b>S8.D.1.1</b> Describe constructive and destructive natural processes that form different geologic structures and resources.	<b>S8.D.1.1.1</b> Explain the rock cycle as changes in the solid earth and rock types found in Pennsylvania (igneous – granite, basalt, obsidian, pumice, ; sedimentary – limestone, sandstone, shale,	

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<p><i>Reference: 3.5.7.A, 4.4.7.B</i></p> <p><b>S8.D.1.2</b> Describe the potential impact of human made processes on changes to Earth’s resources and how they affect everyday life.</p> <p><i>Reference: 3.5.7.B, 3.6.7.A, 4.2.7.C</i></p> <p><b>S8.D.1.3</b> Describe characteristic features of Earth’s water systems or their impact on resources.</p> <p><i>Reference: 3.5.7.D, 4.3.7.B, 4.1.7.A, 4.1.7.B, 4.1.7.C</i></p>	<p>coal; and metamorphic – slate, quartzite, marble, gneiss).</p> <p><b>S8.D.1.1.2</b> Compare and contrast (geological processes, length of time over which change occurs, factors affecting the rate of change) different types of changes in Earth’s surface (e.g., landslides, volcanic eruptions, earthquakes, mountain building, new land being formed, weathering, erosion, sedimentation, soil formation).</p> <p><b>S8.D.1.1.3</b> Identify soil types. (i.e., humus, topsoil, subsoil, loam, loess, and parent material) and their characteristics (particle size, porosity, permeability) found in different biomes and in Pennsylvania, and explain how they formed.</p> <p><b>S8.D.1.1.4</b> Explain how fossils provide evidence about plants and animals that lived long ago throughout Pennsylvania’s history (e.g., fossils provide evidence of different environments).</p> <p><b>S8.D.1.2.1</b> Describe a product’s (synthetic gas produced from coal, bio-diesel produced from soybeans, ethanol produced from corn, laminated hardwood flooring produced from maple trees) transformation process from production to consumption (e.g., prospecting, propagating, growing, maintaining, adapting, treating, converting, distributing, disposing) and explain the process’s potential impacts on Earth’s resources.</p>	
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	<p><b>S8.D.1.2.2</b> Describe potential impacts of human-made processes (e.g., manufacturing, agriculture, transportation, mining on Earth’s resources, both nonliving (air, water, or earth materials) and living (plants and animals).</p> <p><b>S8.D.1.3.1</b> Describe the water cycle and the physical processes on which it depends (i.e., evaporation, condensation, precipitation, transpiration, runoff, infiltration, energy inputs, and phase changes).</p> <p><b>S8.D.1.3.2</b> Compare and contrast characteristics of freshwater and saltwater systems on the basis of their physical characteristics (composition, density, electrical conductivity) and their use as natural resources.</p> <p><b>S8.D.1.3.3</b> Distinguish among different water systems (e.g., wetland systems, ocean systems, river systems, watersheds) and describe their relationships to each other as well as to landforms.</p> <p><b>S8.D.1.3.4</b> Identify the physical characteristics of a stream and how these characteristics determine the types of organisms found in an aquatic environment (e.g., biological diversity, water quality, flow rate, tributaries, surrounding watershed).</p>	
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<b>S8.D.2 Weather, Climate, and Atmospheric Processes</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<b>S8.D.2.1</b> Describe how atmospheric conditions affect regional weather or climate.	<b>S8.D.2.1.1</b> Identify clothing to wear related to extreme temperature conditions.	<b>S8.D.2.1.1</b> Selects picture of clothing/accessories worn when it is warm/cool.
	<b>S8.D.2.1.2</b> Compare and contrast weather conditions using observation or verbal description.	<b>S8.D.2.1.1</b> Selects picture of person wearing clothing/accessory for temperature named and shown.
	<b>S8.D.2.1.3</b> Compare weather conditions at different locations on a weather map.	<b>S8.D.2.1.1</b> Names 1 clothing/accessory that should be worn in temperature named and shown.
	<b>S8.D.2.1.4</b> Describe appropriate precautions in extreme weather conditions.	<b>S8.D.2.1.2</b> Selects weather symbol named. <b>S8.D.2.1.2</b> Names extreme weather condition described. <b>S8.D.2.1.2</b> Selects word that describes weather condition – choices contain similar weather elements. <b>S8.D.2.1.3</b> Selects weather symbol named on weather map. <b>S8.D.2.1.3</b> Selects weather symbol by making prediction based on current weather and trend. <b>S8.D.2.1.3</b> Selects area on a weather map based on information within the map legend. <b>S8.D.2.1.4</b> Selects picture of location that is safest/most dangerous under weather condition named. <b>S8.D.2.1.4</b> Names 2 precautions to take under weather condition named.
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>

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<p><b>S8.D.2.1</b> Explain how pressure, temperature, moisture, and wind are used to describe atmospheric conditions that affect regional weather or climate.</p> <p><i>Reference: 3.5.7.C</i></p>	<p><b>S8.D.2.1.1</b> Explain the impact of water systems on the local weather or the climate of a region (e.g., lake effect snow, land/ocean breezes).</p> <p><b>S8.D.2.1.2</b> Identify how global patterns of atmospheric movement influence regional weather and climate.</p> <p><b>S8.D.2.1.3</b> Identify how cloud types, wind directions and barometric pressure changes are associated with weather patterns in different regions of the country.</p>	
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**Reporting Category**

<b>S8.D.3 Composition and Structure of the Universe</b>		
<b>ALTERNATE ASSESSMENT ANCHOR</b>	<b>ALTERNATE ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<b>ASSESSMENT ANCHOR</b>	<b>ELIGIBLE CONTENT</b>	<b>EXAMPLE</b>
<p><b>S8.D.3.1</b> Explain the relationships between and among the objects of our solar system.</p> <p><i>Reference: 3.4.7.D</i></p>	<p><b>S8.D.3.1.1</b> Describe patterns of Earth’s movements (i.e., rotation, revolution) in relation to the moon and sun (i.e., phases, eclipses, and tides).</p> <p><b>S8.D.3.1.2</b> Describe the role of gravity as the force that governs the movement of the solar system and universe.</p> <p><b>S8.D.3.1.3</b> Compare and contrast characteristics of celestial bodies found in the solar system (e.g., planets, moons, asteroids, comets, meteors, meteoroids, meteorites, inner and outer planets).</p>	