VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: PHYSICAL SCIENCE (1 of 3) **GE: S5-8: 9 (1 of 6)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that various objects and materials have characteristic properties by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Determining the density of a variety of solids and liquids.	Measures and calculates density (D= m/V) of at least 5 selected solids and liquids (e.g., determines density for cup of oil, cup of water, metal cube, plastic die, and glass paperweight).
B	AT supports	Comparing the relative densities of different objects.	Compares the densities of at least 4 different objects by how they behave when placed in water (e.g., ranks the densities of wooden block, bar of soap, plastic statue and, coin by their capacity to float or sink).
C	AT supports	Indicates objects that have the same properties.	Matches 3 similar objects that share the same property* (e.g., red rock to red rock; shiny rock to shiny rock; rough rock to rough rock) with or without distractor as appropriate. * Properties include texture, luster, elasticity, color, odor, magnetism, conductivity, buoyancy, and hardness. Weight and size are characteristics of objects, and are <u>not</u> considered properties.

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: PHYSICAL SCIENCE (1 of 3) **GE S5-8: 12 (2 of 6)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that solids, liquids and gases have unique properties by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing how the motion of molecules defines solids, liquids, and gases.	Describes, dramatizes or illustrates with labels the molecular motion of at least 5 different solids, liquids, and gases, providing at least 1 example of each (e.g., shows that molecules of gases move rapidly; molecules in liquids move moderately; and molecules in solids move slowly).
B	AT supports	Connecting the properties of solids, liquids, and gases with actual examples.	Matches models of the molecular motion in a solid, a liquid, and a gas with at least 1 specific example of each (e.g., matches molecules of gases moving rapidly with water vapor from teapot; molecules in liquids moving moderately with a glass of water; molecules in solids moving slowly with an ice cube).
C	AT supports	Indicating differences in the state of matter of solids, liquids and gases.	Indicates the substance that does not belong by selecting same substances from a field OR identifying substance that is dissimilar in group (e.g., takes all ice cubes and leaves water OR removes water from group of ice cubes).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: PHYSICAL SCIENCE (1 of 3) **GE: S5-8: 14 (3 of 6)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that energy can cause a physical change of state in a substance by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing how heating or cooling would affect the movement of molecules in solids, liquids and gases.	Describes, dramatizes, or illustrates with labels how heating and cooling affect molecular motion within at least 2 solids, 2 liquids, and 1 gas (e.g., uses labeled diagrams to show that molecules move more rapidly when heated - solid chocolate changes into liquid chocolate when heated and back to solid chocolate when cooled; and water changes into a water vapor when heated and back to water and then ice if cooled).
B	AT supports	Identifying the effects of heating and cooling on solids, liquids or gases.	Identifies the change in volume of 1 solid, 1 liquid, and 1 gas when either heated or cooled by demonstrating that cooling slows molecular motion and deceases volume of materials, except for liquid water (e.g., shows a helium balloon at room temperature shrinks when cooled in refrigerator; cooking oil in a graduated cylinder at room temperature shrinks in freezer; and small piece of dry ice at room temperature vaporizes to fill a sealed glass container).
C	AT supports	Indicating a difference in objects after heating.	Identifies how at least 2 objects are affected by a change in temperature (e.g., matches pat of butter melts with liquid butter when heated; and matches ice cube to pool of water when heated).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: PHYSICAL SCIENCE (1 of 3) **GE: S5-8: 21 (4 of 6)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that different amounts of force (push-pull) affect the speed and direction of motion of objects by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Predicting how the strength of an external force will affect the speed or direction of a moving object.	Predicts and then tests how change in external force (stronger or weaker push/pull) will affect the speed or direction of 3 different moving objects (e.g., measures the distance a wagon travels if increasingly stronger pushes are applied to demonstrate that the greater the force, then the greater the speed and distance OR shows how the direction/movement of a canoe changes if paddled with increasing force on one side).
B	AT supports	Connecting the change in speed or direction of an object to the force (backward, forward, or diagonal) that is applied.	Identifies how at least 3 different forces, including at least 1 opposing force, affect the speed or direction of objects (e.g., shows how pushing a ball softly results in the ball slowly moving in the direction of the push and the ball traveling a short distance; kicking the ball results in a rapid movement over a long distance; and blocking a rolling ball results a new direction and/or the sudden reduction of speed).
C	AT supports	Applying forces to everyday objects to change speed.	Imitates motion, direction, or strength of applied force for at least 3 occurrences (e.g., shows the application of force to brake or reduce speed on a moving scooter, skateboard, or wheelchair OR application of a force to accelerate a vehicle from stop to go.

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: PHYSICAL SCIENCE (1 of 3) **GE: S5-8: 24 (5 of 6)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that electrical energy can be transformed into other forms by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing how electrical energy is transformed into heat, light or sound.	Describes or illustrates with labels how electrical energy is transformed to practical use through the operation of at least 6 selected common objects (e.g., shows how electricity moves a fan and electric car; lights a light bulb and TV screen; generates sound in a guitar, and heats a toaster and microwave).
B	AT supports	Identifying multiple forms of energy that can be produced from electricity.	Locates at least 6 examples representing 4 energy forms produced from electricity in everyday environments (e.g., identifies light from the lamp and computer monitor, heat from the oven range, sound from stereo or doorbell, motion from an elevator).
C	AT supports	Recognizing devices that require electrical energy to function.	Repeats the action required to activate or deactivate an electronic device for at least 2 devices (e.g., uses eye point to indicate turning on lights; looks at power button to turn on TV or computer).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: PHYSICAL SCIENCE (1 of 3) **GE: S5-8: 25 (6 of 6)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that the strength of a magnetic force field can vary by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Predicting how distance affects the magnetic force on an object.	Predicts and tests the greatest distance at which an object will be attracted by a magnet with a minimum of at least 3 trials (e.g., uses a fixed magnet and multiple locations at a variety of distances from magnet to determine the location that represents the furthest distance at which a paperclip will still be attracted).
B	AT supports	Classifying objects which are attracted to and repelled by magnets.	Sorts at least 10 common objects into 3 labeled categories – 1) attracted, 2) not attracted, and 3) repelled by magnets, with at least 2 items in each category (e.g., iron based nut, bolts, paperclips, staples are attracted; like poles of different magnets and carbon-based materials are repelled by magnets; plastic and most organic materials are not attracted).
C	AT supports	Indicating the correct location for objects to be attracted to magnets.	Signaling when an object is placed within the magnetic field of attraction least 3 times (e.g., uses eye point to signal when an object is within the magnetic field of a fixed magnet).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: LIFE SCIENCE (2 of 3) **GE: S5-8: 33 (1of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that energy is needed for living things to survive by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing how living organisms obtain materials they need to produce energy.	Describes or illustrates with labels how at least 3 living things obtain at least 3 basic materials for survival (e.g., frog breathes air for oxygen, eats insects for food, and drinks water from pond; human needs water from well, food from garden, and oxygen from air; fish needs oxygen from water, water from water, and food from insects).
B	AT supports	Identifying what plants and animals require to produce energy to survive.	Identifies the sources of energy necessary for the survival of at least 1 plant and 1 animal (e.g., a plant needs sunlight, water, and carbon dioxide to make food and, combined with oxygen, produces energy; an animal or human needs food, water, and oxygen to produce energy).
C	AT supports	Matching an energy source necessary for living things to survive to the specific organism.	Connects energy sources to the plants or animals that need them for at least 2 relationships (e.g., plant belongs in window to get sunlight; fish needs water to breathe or human needs food to eat)**.**

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: LIFE SCIENCE (2 of 3) **GE: S5-8: 35 (2 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that living things exist in a balance with other organisms in their environment (food webs) by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing how living things are affected by changes in a food web within a local environment.	Describes or demonstrates how at least 3 organisms are affected by changes in the food web of their environment. (e.g., shows a decrease in grasshoppers may cause an increase in grasses; a decrease in milkweed may cause a decrease in monarch butterflies; a decrease in bats may cause an increase in insects).
B	AT supports	Identifying organisms as producers or consumers in the local environment.	Identifies or sorts at least 3 producers and 3 consumers in their local environment (e.g., identifies and labels grasses, trees, and algae as 'producers'; rabbits, squirrels, hawks, coyotes as 'consumers').
C	AT supports	Connects living things to their primary food sources.	Identifies foods that are or are not connected with the related organism for at least 3 organisms (e.g., shows snake is connected to mouse; human is not connected to grass, and bird is connected to worm).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: LIFE SCIENCE (2 of 3) **GE: S5-8: 40 (3 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that physical features of humans are inherited from parents by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing how cells from parents join to produce offspring.	Describes or illustrates with labels how all human offspring are produced by the joining of cells from each parent (e.g., describes how an egg cell from female and a sperm cell from male join to produce the first combined cell of the offspring).
B	AT supports	Identifying physical similarities between biological parents and their offspring.	Attributes at least 3 physical characteristics to the contributing parent(s) (e.g., connects eye color to mother, hair color to both mother and father, and height to father).
C	AT supports	Indicating physical features of humans.	Matches the same physical features of in 1 person to another person for at least 3 features (e.g., human nose to human nose and not with dog nose; human hair to hair and not cat fur; human skin to human skin and not snake skin).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: LIFE SCIENCE (2 of 3) **GE: S5-8: 41 (4 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that human body organs work together in systems to help humans survive by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing functions of human body systems and their related organs.	Describes or demonstrates how at least 3 distinct human body organs function within a system to help humans survive (e.g., shows respiratory system combines functions of lungs, trachea, and nose/mouth to bring oxygen to the human body).
B	AT supports	Connecting external human parts to larger body systems.	Connects at least 6 observable human body parts in at least 3 different body systems (e.g., links mouth and teeth to digestive system; mouth and nose to respiratory system; biceps and quadriceps to muscle system).
C	AT supports	Locating external body structures/organs to location on the human body.	Matches at least 4 external body parts to the correct location on the human body (e.g., matches eyes on adult to own eyes, mouth on adult to own mouth, arm on adult to own arm, leg on adult to own leg).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: LIFE SCIENCE (2 of 3) **GE: S5-8: 43 (5 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that the human body changes during its life span by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Comparing similarities and differences across human life stages.	Compares and contrasts the 5 stages of the human life span (e.g., shows infants as smallest and unable to feed themselves or walk; toddlers as starting to walk and talk and having short legs and long bodies; children as having longer arms, legs, and bodies and able to run; teenagers as approaching full size and having bigger muscles; and adults as having full stature and strength).
B	AT supports	Sequencing the stages in a human life span.	Sequences the 5 stages of the human life span (e.g., orders pictures of baby, toddler, child, teenager, adult in the correct sequence).
C	AT supports	Indicating the order of development in the human life span.	Indicates 3 real people (or figure representations) in the correct order of life span development (e.g., imitates the order of human development - child first, then teenager, then adult).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: EARTH & SPACE (3 of 3) **GE: S5-8: 44 (1 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that the earth orbits around the sun and the moon orbits around the earth by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Comparing the length of time for the orbits of the earth around the sun and the moon around the earth.	Compares, diagrams, or models the length of time for the earth to orbit the sun, and the moon to orbit the earth (e.g., shows earth's orbit around the sun as 365 days and the moon's orbit around the earth as 30 days).
B	AT supports	Identifying the orbit and rotation of the earth around the sun, and the moon around the earth.	Represents the earth's orbit around the sun and the moon's orbit around earth (e.g., uses a labeled diagram or model to illustrate the orbit of earth around the sun and the orbit of the moon around the earth).
C	AT supports	Indicating that the sun and moon are in the sky, and the earth is underfoot.	Indicates that the sun and moon are above us in the sky, and the earth is beneath us on at least 3 occurrences (e.g., uses eye point to show that the earth is under us, and the moon and sun are above us.

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: EARTH & SPACE (3 of 3) **GE: S5-8: 46 (2 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that characteristics of rocks provide clues to rocks' history by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Explaining how the characteristics of rocks indicate their history.	Identifies the characteristics (crystals, minerals, layers) of 3 types of rock (igneous, sedimentary, and metamorphic) and explains how each was formed (e.g., shows how sand or shells from the sea floor has been layered into a sedimentary rock; layered rock has been compressed into a metamorphic rock; and igneous rock has been cooled from magma into a crystalline form with the crystal size revealing how quickly the magma cooled).
B	AT supports	Identifying rock examples with their position in the Rock Cycle.	Examines the characteristics of at least 4 different rock samples and matches them with their correct location in the Rock Cycle (e.g., uses a chart of the rock cycle with detailed illustrations or pictures to match 4 rock samples in at least 3 different locations in the Rock Cycle).
C	AT supports	Recognizing earth materials (rocks and minerals) from an assortment of earth and non-earth materials	Recognizes the earth material within assortments that include non-earth materials for least 2 groups (e.g., selects rock in group that includes plant and/or mushroom; and mica sample from fur and/or bark).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: EARTH & SPACE (3 of 3) **GE: S5-8: 47 (3 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that the surface of the earth undergoes changes (slow--weathering; fast—volcanoes, earthquakes) by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing new landforms produced by relocation of earth materials.	Describes or illustrates with labels at least 4 landforms that have been produced by relocation of earth materials (e.g., shows how landslides after earthquakes create a hill; how volcanoes create ash deposition or island growth; how glacier melt produces streams and lakes; and how sediment deposits at the mouth of a river create deltas).
B	AT supports	Identifying the changes in the earth's surface due to weathering and erosion of earth materials.	Identifies the effects of at least 3 examples of weathering and erosion on the earth's surface with at least 1 example of each (e.g., uses before and after pictures to document local erosion showing how water washes away soil on a hill; a river erodes its banks to create meanders; and water freezes in the cracks of a cliff face to break rocks apart).
C	AT supports	Matching earth materials to land forms.	Matches at least 3 examples of earth materials to their typical locations (e.g., links sand to beaches, rocks to cliffs, water to rivers and ponds).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: EARTH & SPACE (3 of 3) **GE: S5-8: 48 (4 of 5)**

Entry Point	CONDITIONS	BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding of the processes of the water cycle by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Explaining the processes of the water cycle on earth.	Explains the major processes of the water cycle (e.g., shows precipitation as water falling to earth as rain; evaporation as heating causing liquid water to change into an invisible gas (water vapor); and condensation as water vapor cooling and condensing into clouds that, in turn, produce more precipitation).
B	AT supports	Identifying the path of water in the environment during the water cycle.	Sequences the path of water in the water cycle through at least 3 transitions (e.g., uses pictorial images of the processes to recreate the path of water during the water cycle - water moves from a lake to water vapor to cloud to rain to runoff to groundwater to lake).
C	AT supports	Recognizing different forms of water in the environment.	Locates at least 3 different forms of water in the environment (e.g., finds liquid water, snow, clouds).

VTAAP SCIENCE GE ENTRY POINTS

GRADES 5-8

DOMAIN: EARTH & SPACE (3 of 3) **GE: S5-8: 49 (5 of 5)**

Entry Point	CONDITIONS	TARGET BEHAVIORS	CRITERIA
	Given…	*Student will demonstrate understanding that humans cause both positive and negative changes in the natural environment. by:*	*As demonstrated by a Student Product that…*
A	AT supports if needed	Describing how a human activity positively and negatively affects specific (local) natural resources.	Describes or demonstrates an example of at least 1 human activity that has a positive effect and 1 human activity that has had a negative effect on specific natural resources in the local environment (e.g., shows how having doe hunting season produces a healthier deer herd by controlling the population; and how industrial pollution contributes to acid rain which harms trees).
B	AT supports	Identifying changes in the local environment that are caused by humans.	Identifies at least 3 different changes in the local environment caused by human activity (e.g., shows woodlot management with selective tree cutting; Green-up Day cleaning of roadside waste; and gravel pits becoming landfills).
C	AT supports	Indicating natural resources that exist in the local environment and benefit humans.	Indicates as natural 3 examples of resources that are harvested or extracted from the local environment to benefit humans (e.g., indicates tree/firewood as natural, granite/marble as natural, grass/hay as natural, and plastic spoon as unnatural).