Science: Physical Science

MATTER AND ITS INTERACTIONS	**1a**	**Identify the periodic table as a model to use to predict the properties of elements.** LC-HS-PS1-1A
	1b	**Identify that the periodic table was created based on the patterns of electrons in the outermost energy level of atoms.** LC-HS-PS1-1B
	1c	**Identify that the number of electrons in the outermost energy level of atoms impacts the behavior of the element.** LC-HS-PS1-1C
	1d	**Identify the periodic table as a model that predicts the number of electrons and other subatomic particles.** LC-HS-PS1-1D
	2a	**Identify an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms.** LC-HS-PS1-2A
	2b	**Identify an explanation for the outcome of a simple chemical reaction based on trends in the periodic table.** LC-HS-PS1-2B
	2c	**Construct an explanation for the outcome of a simple chemical reaction based on the chemical properties of the elements involved.** LC-HS-PS1-2C
	7a	**Identify a chemical equation, and identify the reactants and products which support the claim that matter (i.e., atoms) is neither created or destroyed in a chemical reaction.** LC-HS-PS1-7A
	7b	**Identify a mathematical representation (e.g., table, graph) or pictorial depictions that illustrates the claim that mass is conserved during a chemical reaction.** LC-HS-PS1-7B
	8a	**Identify models that illustrate nuclear processes (i.e., fusion, fission, and radioactive decays), involve the release or absorption of energy.** LC-HS-PS1-8A
	8b	**Contrast changes during the processes of alpha, beta, or gamma radioactive decay using graphs or pictorial depictions of the composition of the nucleus of the atom and the energy released.** LC-HS-PS1-8B
MOTION AND STABILITY: FORCES AND INTERACTION	**1a**	**Predict changes in the motion of a macroscopic object, such as a falling object, an object rolling down a ramp, or a moving object being pulled by a constant force using data (e.g., tables or graphs of position or velocity as a function of time for an object subject to a net unbalanced force).** LC-HS-PS2-1A

	2a	Identify an example of the law of conservation of momentum (e.g., in a collision, the momentum change of an object is equal to and opposite of the momentum change of the other object) represented using graphical or visual displays (e.g., pictures, pictographs, drawings, written observations, tables, charts). LC-HS-PS2-2A
	3a	Evaluate a device (e.g., football helmet or a parachute) designed to minimize force by comparing data (i.e., momentum, mass, velocity, force, or time). LC-HS-PS2-3A
	5a	Identify situations and provide evidence where an electric current is producing a magnetic field. LC-HS-PS2-5A
	5b	Identify situations and provide evidence where a magnetic field is producing an electric current. LC-HS-PS2-5B
ENERGY	2a	Identify that two factors, an object's mass and height above the ground, affect gravitational potential energy (i.e., energy stored due to position of an object above Earth) at the macroscopic level. LC-HS-PS3-2A
	2b	Identify that the mass of an object and its speed determine the amount of kinetic energy the object possesses. LC-HS-PS3-2B
	3a	Identify the forms of energy that will be converted by a device that converts one form of energy into another form of energy. LC-HS-PS3-3A
	3b	Identify steps in a model of a device showing the transformations of energy that occur (e.g., solar cells, solar ovens, generators, turbines). LC-HS-PS3-3B
	3c	Describe constraints to the design of the device which converts one form of energy into another form of energy (e.g., cost or efficiency of energy conversion). LC-HS-PS3-3C
	4a	Identify the temperatures of two liquids of different temperature before mixing and after combining to show uniform energy distribution. LC-HS-PS3-4A
	4b	Investigate the transfer of thermal energy when two substances are combined within a closed system. LC-HS-PS3-4B
	5a	Use a model to identify the cause and effect relationships between forces produced by electric or magnetic fields and the change of energy of the objects in the system. LC-HS-PS3-5A
WAVES AND THEIR APPLICATIONS	1a	Qualitatively describe cause and effect relationships between changes in wave speed and type of media through which the wave travels using mathematical and graphical representations. LC-HS-PS4-1A
	1b	Identify examples that illustrate the relationship between the frequency and wavelength of a wave. LC-HS-PS4-1B

1c **Identify evidence that the speed of a wave depends on the media through which it travels.** LC-HS-PS4-1C

4a **Recognize the relationship between the damage to living tissue from electromagnetic radiation and the energy of the radiation.** LC-HS-PS4-4A