South Carolina Employability Credential

Essentials of Science II: Physical Science

MOTION AND STABILITY: FORCES AND INTERACTIONS PS2	1	**Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.** P-PS2-1
	2	**Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.** P-PS2-2
	3	**Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the effect of a force on a macroscopic object during a collision.** P-PS2-3
	4	**Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.** C-PS2-6
ENERGY PS3	1	**Create a computational model to calculate the change in the energy of one component in a system when the following are known: 1) the change in energy of the other component(s) and 2) the energy flowing in and out of the system.** P-PS3-1
	2	**Develop and use models to illustrate that energy can be explained by the combination of motion and position of objects at the macroscopic scale the motion and position of particles at the microscopic scale.** P-PS3-2
	3	**Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.** P-PS3-3
	4	**Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperatures are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).** C-PS3-4
WAVES AND THEIR APPLICATIONS IN TECHNOLOGIES FOR INFORMATION TR[illegible]	1	**Design, evaluate, and refine a solution for improving how digital devices store and transmit information.** P-PS4-2
	2	**Evaluate the validity and reliability of claims in published materials of the effects [illegible]hat different frequencies of electromagnetic radiation have when absorbed by [illegible]natter.** P-PS4-4

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	3 **Communicate technical information about how some technological devices use the principles of the electromagnetic spectrum to cause matter to transmit and capture information and energy.** P-PS4-5
MATTER AND ITS INTERACTIONS PS1	1 **Use the periodic table as a model to predict the relative properties of elements based upon the patterns of electrons in the outermost energy level of atoms.** C-PS1-1
	2 **Plan and conduct an investigation to gather evidence to compare the structure of substances at a bulk scale to infer the strength of various forces between particles.** C-PS1-3