South Carolina College- and Career-Ready Science

Grade 8

Adopted 2021

Motion and Stability: Forces and Interactions	**8-PS2-1.**	**Apply Newton's third law to design a solution to a problem involving the motion of two colliding objects.** 8-PS2-1
	8-PS2-2.	**Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.** 8-PS2-2
	8-PS2-3.	**Analyze and interpret data to determine the factors that affect the strength of electric and magnetic forces.** 8-PS2-3
	8-PS2-4.	**Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects and the distance between them.** 8-PS2-4
	8-PS2-5.	**Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.** 8-PS2-5
Waves and Their Applications in Technologies for Information Transfer	**8-PS4-1.**	**Using mathematical representations, describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.** 8-PS4-1
	8-PS4-3.	**Communicate information to support the claim that digital devices are used to improve our understanding of how waves transmit information.** 8-PS4-3
From Molecules to Organisms: Structures and Processes	**8-LS1-4.**	**Use arguments, based on empirical evidence and scientific reasoning, to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.** 8-LS1-4
	8-LS1-5.	**Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.** 8-LS1-5

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Heredity: Inheritance and Variation of Traits	**8-LS3-1.**	**Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.** 8-LS3-1
	8-LS3-2.	**Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.** 8-LS3-2
Biological Evolution: Unity and Diversity	**8-LS4-1.**	**Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operated in the past as they do today.** 8-LS4-1
	8-LS4-2.	**Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer their ancestral relationships.** 8-LS4-2
	8-LS4-4.	**Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individual's probability of surviving and reproducing in a specific environment.** 8-LS4-4
	8-LS4-5.	**Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.** 8-LS4-5
	8-LS4-6.	**Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.** 8-LS4-6
Earth's Place in the Universe	**8-ESS1-1.**	**Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, tides, and seasons.** 8-ESS1-1
	8-ESS1-2.	**Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.** 8-ESS1-2
	8-ESS1-3.	**Evaluate information to determine scale properties of objects in the solar system.** 8-ESS1-3