Oklahoma Science

Grade 7

Adopted 2020

Matter and Its Interactions	1. **Develop models to describe the atomic composition of simple molecules and extended structures.** 7.PS1.1
	2. **Analyze and interpret patterns of data related to the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.** 7.PS1.2
	3. **Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.** 7.PS1.3
	5. **Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.** 7.PS1.5
	6. **Construct, test, and modify a device that releases or absorbs thermal energy by chemical processes to solve a problem.** 7.PS1.6
Energy	1. **Construct and interpret graphical displays of data to describe the proportional relationships of kinetic energy to the mass of an object and to the speed of an object.** 7.PS3.1
	2. **Develop a model to describe that when objects interacting at a distance change their arrangement, different amounts of potential energy are stored in the system.** 7.PS3.2
	5. **Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.** 7.PS3.5
From Molecules to Organisms: Structure and Function	6. **Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.** 7.LS1.6
	7. **Develop a model to describe how food molecules in plants and animals are broken down and rearranged through chemical reactions to form new molecules that support growth and/or release energy as matter moves through an organism.** 7.LS1.7
Ec Int and Dynamics	**Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.** 7.LS2.1

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	2. **Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.** 7.LS2.2
	3. **Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.** 7.LS2.3
	4. **Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.** 7.LS2.4
	5. **Evaluate competing design solutions for maintaining biodiversity and ecosystem services.** 7.LS2.5
Earth and Human Activity	1. **Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.** 7.ESS3.1
	3. **Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.** 7.ESS3.3
	4. **Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.** 7.ESS3.4
	5. **Obtain, evaluate, and communicate evidence of the factors that have caused changes in global temperatures over the past century.** 7.ESS3.5