Louisiana Science

Grade 7

Adopted 2017

Physical Science

Matter and its Interactions

7-MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. 7-MS-PS1-2

7-MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and the state of a pure substance when thermal energy is added or removed. 7-MS-PS1-4

7-MS-PS1-5. 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-MS-PS1-5

Energy

7-MS-PS3-4. Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. 7-MS-PS3-4

Earth and Space Science

Earth's Systems

7-MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. 7-MS-ESS2-4

7-MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. 7-MS-ESS2-5

7-MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth causes patterns of atmospheric and oceanic circulation that determine regional climates. 7-MS-ESS2-6

Earth and Human Activity

7-MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. 7-MS-ESS3-5

Life Science

From Molecules to Organisms: Structures and Processes

MS-LS1-3. Use an argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. 7-MS-LS1-3

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7-MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis and cellular respiration in the cycling of matter and flow of energy into and out of organisms. 7-MS-LS1-6

7-MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. 7-MS-LS1-7

Ecosystems: Interactions, Energy, and Dynamics

7-MS-LS2-5. Undertake a design project that assists in maintaining diversity and ecosystem services. 7-MS-LS2-5

7-MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. 7-MS-LS2-4

Heredity: Inheritance and Variation of Traits

7-MS-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. 7-MS-LS3-2

Biological Evolution: Unity and Diversity

7-MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. 7-MS-LS4-4

7-MS-LS4-5. Gather, read, and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms. 7-MS-LS4-5