Science: Grade 7

MATTER AND ITS INTERACTIONS	1a	Using data, identify changes that occur after a chemical reaction has taken place (e.g., change in color occurs, gas is created, heat or light is given off or taken in). LC-7-MS-PS2-1A
	4a	Use drawings and diagrams to Identify that adding or removing thermal energy increases or decreases particle motion until a change of state occurs. LC-7-MS-PS1-4A
	5a	Use a model to identify a chemical reaction in which the mass of the reactants is shown to be equal to the mass of the products. LC-7-MS-PS1-5A
	5b	Use a model to show how the total number of atoms does not change in a chemical reaction and thus mass is conserved. LC-7-MS-PS1-5B
ENERGY	4a	Using examples and data measurements, describe the relationship between different masses of the same substance and the change in average kinetic energy when thermal energy is added to or removed from the system. LC-7-MS-PS3-4A
EARTH'S SYSTEMS	4a	Using a model(s), identify components in a model of water cycling among land, ocean, and atmosphere, and recognize how it is propelled by sunlight and gravity. LC-7-MS-ESS2-4A
	5a	Using data, identify how water influences weather and weather patterns through atmospheric, land, and oceanic circulation. LC-7-MS-ESS2-5A
	5b	Using data, identify examples of how the sun drives all weather patterns on Earth (e.g., flow of energy that moves through Earth's land, air, and water). LC-7-MS-ESS2-5B
	6a	Using a model(s), identify that as the sun's energy warms the air over the land (expands and rises), the air over the ocean (cooler air) rushes in to take its place and is called wind (sea breeze). LC-7-MS-ESS2-6A
	6b	Using a model(s), identify that weather and climate vary with latitude, altitude, and regional geography. LC-7-MS-ESS2-6B

	5a Identify evidence of the effects of human activities on changes in global temperatures over the past century using a variety of resources (e.g., tables, graphs, and maps of global and regional temperatures; atmospheric levels of gases, such as carbon dioxide and methane; and rates of human activities). LC-7-MS-ESS3-5A
	5b Using a variety of resources, ask questions or make observations about how the effects of human activities have changed global temperatures. LC-7-MS-ESS3-5B
FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES	**3a** Identify that the body is a system of multiple interacting subsystems. LC-7-MS-LS1-3A
	3b Identify evidence which supports a claim about how the body is composed of various levels of organization for structure and function which includes cells, tissues, organs, organ systems, and organisms using models or diagrams. LC-7-MS-LS1-3B
	6 Use a scientific explanation about photosynthesis to identify the movement of matter and flow of energy as plants use the energy from light to make sugars. LC-7-MS-LS1-6
	7a Use a model to identify the outcome of the process of breaking down food molecules (e.g., sugar) as the release of energy, which can be used to support other processes within the organism. LC-7-MS-LS1-7A
ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS	**5a** Identify a design project that shows the stability of an ecosystem's biodiversity is the foundation of a healthy, functioning ecosystem. LC-7-MS-LS2-5A
	4a Using evidence, identify the outcome of changes in physical or biological components of an ecosystem to populations of organisms in that ecosystem. LC-7-MS-LS2-4A
HEREDITY: INHERITANCE AND VARIATION OF TRAITS	**2a** Using a model(s), identify that in asexual reproduction identical inherited traits are passed from parents to offspring. LC-7-MS-LS3-2A
	2b Using a model(s), identify that in sexual reproduction a variety of inherited traits are passed from parents to offspring and lead to differences in offspring (e.g., eye color). LC-7-MS-LS3-2B
BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY	**4a** Identify a similarity or difference in an external feature (e.g., shape of ears on animals or shape of leaves on plants) between young plants and animals and their parents. LC-7-MS-LS4-4A

4b **Describe the relationship between genetic variation and the success of organisms in a specific environment (e.g., individual organisms that have genetic variations and traits that are disadvantageous in a particular environment will be less likely to survive, and those traits will decrease from generation to generation due to natural selection).** LC-7-MS-LS4-4B

5a **Identify ways in which technologies (e.g., artificial selection for breeding of certain plants and animals) have changed the way humans influence the inheritance of desired traits in plants and animals.** LC-7-MS-LS4-5A