Grade 7 Science MATTER AND ITS INTERACTIONS	
Louisiana Student Standards	**Louisiana Connectors (LC)**
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.	**LC-7-MS-PS2-1a** 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).
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.	**LC-7-MS-PS1-4a** Use drawings and diagrams to Identify that adding or removing thermal energy increases or decreases particle motion until a change of state occurs.
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.	**LC-7-MS-PS1-5a** 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-PS1-5b Use a model to show how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

Grade 7 Science ENERGY	
Louisiana Student Standards	**Louisiana Connectors (LC)**
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.	**LC-7-MS-PS3-4a** 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.

Grade 7 Science EARTH'S SYSTEMS	
Louisiana Student Standards	**Louisiana Connectors (LC)**
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.	**LC-7-MS-ESS2-4a** 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.
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.	**LC-7-MS-ESS2-5a** Using data, identify how water influences weather and weather patterns through atmospheric, land, and oceanic circulation.
	LC-7-MS-ESS2-5b 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).
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-ESS2-6a** 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).
	7-MS-ESS2-6b Using a model(s), identify that weather and climate vary with latitude, altitude, and regional geography.

Grade 7 Science EARTH AND HUMAN ACTIVITY	
Louisiana Student Standards	**Louisiana Connectors (LC)**
7-MS-ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	**LC-7-MS-ESS3-5a** 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-ESS3-5b Using a variety of resources, ask questions or make observations about how the effects of human activities have changed global temperatures.

Grade 7 Science FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES	
Louisiana Student Standards	**Louisiana Connectors (LC)**
7-MS-LS1-3 Use an argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	**LC-7-MS-LS1-3a** Identify that the body is a system of multiple interacting subsystems.
	LC-7-MS-LS1-3b 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.
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.	**LC-MS-LS1-6** 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.
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.	**LC-7-MS-LS1-7a** 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.

Grade 7 Science ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS	
Louisiana Student Standards	**Louisiana Connectors (LC)**
7-MS-LS2-5 Undertake a design project that assists in maintaining diversity and ecosystem services.	**LC-7-MS-LS2-5a** Identify a design project that shows the stability of an ecosystem's biodiversity is the foundation of a healthy, functioning ecosystem.
7-MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.	**LC-7-MS-LS2-4a** Using evidence, identify the outcome of changes in physical or biological components of an ecosystem to populations of organisms in that ecosystem.

Grade 7 Science HEREDITY: INHERITANCE AND VARIATION OF TRAITS	
Louisiana Student Standards	**Louisiana Connectors (LC)**
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.	**LC-7-MS-LS3-2a** Using a model(s), identify that in asexual reproduction identical inherited traits are passed from parents to offspring.
	LC-7-MS-LS3-2b 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).

Grade 7 Science BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY	
Louisiana Student Standards	**Louisiana Connectors (LC)**
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.	**LC-7-MS-LS4-4a** 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-LS4-4b 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).
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.	**LC-7-MS-LS4-5a** 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.