

Standards, Prepared Graduate Competencies and Grade Level Expectations CMAS Science Grade 5	
<b>1</b>	<b>Physical Science</b>
<b>PGC 1</b>	Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions
<b>GLE 1</b>	Mixtures of matter can be separated regardless of how they were created; all weight and mass of the mixture are the same as the sum of weight and mass of its parts
<b>2</b>	<b>Life Science</b>
<b>PGC 1</b>	Analyze how various organisms grow, develop and differentiate during their lifetimes based on an interplay between genetics and their environment
<b>GLE 1</b>	All organisms have structures and systems with separate functions
<b>PGC 2</b>	Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection
<b>GLE 2</b>	Human body systems have basic structures, functions, and needs
<b>3</b>	<b>Earth Systems Science</b>
<b>PGC 1</b>	Describe how humans are dependent on the diversity of resources provided by Earth and Sun
<b>GLE 1</b>	Earth and sun provide a diversity of renewable and nonrenewable resources
<b>PGC 2</b>	Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system
<b>GLE 2</b>	Earth's surface changes constantly through a variety of processes and forces
<b>GLE 3</b>	Weather conditions change because of the uneven heating of Earth's surface by the Sun's energy. Weather changes are measured by differences in temperature, air pressure, wind, and water in the atmosphere and type of precipitation

Standards, Prepared Graduate Competencies and Grade Level Expectations CMAS Science Grade 8	
<b>1</b>	<b>Physical Science</b>
<b>PGC 1</b>	Observe, explain, and predict natural phenomena governed by Newton's laws of motion, acknowledging the limitations of their application to very small or very fast objects
<b>GLE 1</b>	Identify and calculate the direction and magnitude of forces that act on an object, and explain the results in the object's change of motion
<b>PGC 2</b>	Apply an understanding that energy exists in various forms, and its transformation and conservation occur in processes that are predictable and measurable
<b>GLE 2</b>	There are different forms of energy, and those forms of energy can be changed from one form to another – but total energy is conserved
<b>GLE 4</b>	Recognize that waves such as electromagnetic, sound, seismic, and water have common characteristics and unique properties
<b>PGC 3</b>	Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions
<b>GLE 3</b>	Distinguish between physical and chemical changes, noting that mass is conserved during any change
<b>2</b>	<b>Life Science</b>
<b>PGC 1</b>	Explain and illustrate with examples how living systems interact with the biotic and abiotic environment
<b>GLE 1</b>	Human activities can deliberately or inadvertently alter ecosystems and their resiliency
<b>PGC 2</b>	Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment
<b>GLE 2</b>	Organisms reproduce and transmit genetic information (genes) to offspring, which influences individuals' traits in the next generation
<b>3</b>	<b>Earth Systems Science</b>
<b>PGC 1</b>	Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system
<b>GLE 1</b>	Weather is a result of complex interactions of Earth's atmosphere, land and water, that are driven by energy from the sun, and can be predicted and described through complex models
<b>GLE 2</b>	Earth has a variety of climates defined by average temperature, precipitation, humidity, air pressure, and wind that have changed over time in a particular location
<b>PGC 2</b>	Describe and interpret how Earth's geologic history and place in space are relevant to our understanding of the processes that have shaped our planet
<b>GLE 3</b>	The solar system is comprised of various objects that orbit the Sun and are classified based on their characteristics
<b>GLE 4</b>	The relative positions and motions of Earth, Moon, and Sun can be used to explain observable effects such as seasons, eclipses, and Moon phases