

7th Grade Science Standards for Oklahoma

MS = Middle School

PS = Physical Science

LS = Life Science

ESSS = Earth and Space Science

- **MS-PS1-1 Develop models to describe** the atomic composition of simple molecules and extended structures.
- **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.
- **MS-PS2-4 Construct and present arguments using evidence to support the claim that** gravitational interactions are attractive and depend on the masses of interacting objects.
- **MS-PS3-6 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.
- **MS-LS1-4 Use arguments based on empirical evidence and scientific reasoning to support an explanation for** how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.
- **MS-LS1-5 Construct a scientific explanation based on evidence for how** environmental and genetic factors influence the growth of organisms.
- **MS-LS1-8 Gather and synthesize information that** sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.
- **MS-LS3-1 Develop and use a model to describe** why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.
- **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.
- **MS-LS4-3 Analyze displays of pictorial data** to compare patterns of similarities in the embryological development across multiple species **to identify relationships** not evident in the fully formed anatomy.
- **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.
- **MS-LS4-5 Gather and synthesize information about** the technologies that have changed the way humans influence the inheritance of desired traits in organisms.
- **MS-LS4-6 Use mathematical representations to support explanations of** how natural selection may lead to increases and decreases of specific traits in populations over time.
- **MS-ESS1-1 Develop and use a model of the Earth-sun-moon system to describe** the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
- **MS-ESS1-2 Develop and use a model to describe** the role of gravity in the motions within galaxies and the solar system.
- **MS-ESS1-3 Analyze and interpret data to determine** scale properties of objects in the solar system.
- **MS-ESS2-5 Collect data to provide evidence for how** the motions and complex interactions of air masses results in changes in weather conditions.
- **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.