

	Pre-Unit: Introduction to Life Science	Unit 1: Living Things	Unit 2: Cells	Unit 3: Cell Processes
	<i>Approximately 3 weeks</i>	<i>Approximately 6 weeks</i>	<i>Approximately 6 weeks</i>	<i>Approximately 2 weeks</i>
Essential Standard(s)	Pre-standard	S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.	S7L2. Students will describe the structure and function of cells, tissues, organs, and organ systems.	S7L2. Obtain, evaluate, and communicate information to describe how cell structures, cells, tissues, organs, and organ systems interact to maintain the basic needs of organisms.
Learning Targets for Essential Standard(s)	Students will learn policies and procedures in the 7 th grade life science classroom.	I can explain characteristics, needs, and classification of organisms.	I can explain how the different cell structures work together in order to ensure organisms survive and reproduce.	I can explain how cells take in and release particles needed to live.
Supporting Standards	Pre-standard: Rationalizations	<p>a. Develop and defend a model that categorizes organisms based on common characteristics.</p> <p>b. Evaluate historical models of how organisms were classified based on physical characteristics and how that led to the six kingdom system (currently archaea, bacteria, protists, fungi, plants, and animals).</p>	<p>a. Explain that cells take in nutrients in order to grow and divide and to make needed materials.</p> <p>b. Relate cell structures (cell membrane, nucleus, cytoplasm, chloroplasts, & mitochondria) to basic cell functions.</p> <p>c. Explain that cells are organized into tissues, tissues into organs, organs into systems, and systems into organisms.</p>	a. Develop a model and construct an explanation of how cell structures (specifically the nucleus, cytoplasm, cell membrane, cell wall, chloroplasts, lysosome, and mitochondria) contribute to the function of the cell as a system in obtaining nutrients in order to grow, reproduce, make needed materials, and process waste.
Learning Targets for Supporting Standards	<p>Rationalization: Students will follow correct protocol for identifying and reporting safety problems and violations.</p> <p>Rationalization: Students will be introduced to policies and procedures in the middle school science classroom.</p>	<p>I can distinguish living organisms from nonliving things.</p> <p>I can explain what living things need to survive.</p> <p>I can identify the levels of classification.</p> <p>I can identify organisms using a taxonomic key.</p> <p>I can explain why/how biologists classify organisms based on their physical characteristics.</p>	<p>I can explain the 3 parts of the Cell Theory.</p> <p>I can explain the difference between a prokaryotic and eukaryotic cell.</p> <p>I can locate and identify the function of the cell's organelles.</p> <p>I can label the parts of a microscope and explain their function.</p> <p>I can explain the five levels of organization that an organism contains.</p>	<p>I can explain how molecules move across the cell membrane.</p> <p>I can explain the process of photosynthesis.</p> <p>I can explain the process of cellular respiration.</p> <p>I can explain how the cell cycle works.</p>

	Unit 4: Body Systems	Unit 5: Genetics	Unit 6: Evolution	Unit 7: Populations and Communities
	<i>Approximately 2 weeks</i>	<i>Approximately 6 weeks</i>	<i>Approximately 3 weeks</i>	<i>Approximately 6 weeks</i>
Essential Standard(s)	S7L2. Obtain, evaluate, and communicate information to describe how cell structures, cells, tissues, organs, and organ systems interact to maintain the basic needs of organisms.	S7L3. Obtain, evaluate, and communicate information to explain how organisms reproduce either sexually or asexually and transfer genetic information to determine the traits of their offspring.	S7L5. Obtain, evaluate, and communicate information from multiple sources to explain the theory of evolution of living organisms through inherited characteristics.	S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.
Learning Targets for Essential Standard(s)	I can explain how the systems of the body work together in order to maintain the basic needs of organisms and maintain homeostasis.	I can communicate how parents pass down specific traits to their offspring resulting in genetic variation.	I can explain how genetic variation (diversity) and environmental factors affect the probability that a species will survive and reproduce.	I can explain the relationship and interactions between all organisms, both biotic and abiotic within an ecosystem.
Supporting Standards	<p>b. Develop and use a conceptual model of how cells are organized into tissues, tissues into organs, organs into systems, and systems into organisms.</p> <p>c. Construct an argument that systems of the body (Cardiovascular, Excretory, Digestive, Respiratory, Muscular, Nervous, and Immune) interact with one another to carry out life processes.</p>	<p>a. Construct an explanation supported with scientific evidence of the role of genes and chromosomes in the process of inheriting a specific trait.</p> <p>b. Develop and use a model to describe how asexual reproduction can result in offspring with identical genetic information while sexual reproduction results in genetic variation.</p> <p>c. Ask questions to gather and synthesize information about the ways humans influence the inheritance of desired traits in organisms through selective breeding</p>	<p>a. Use mathematical representations to evaluate explanations of how natural selection leads to changes in specific traits of populations over successive generations.</p> <p>b. Construct an explanation based on evidence that describes how genetic variation and environmental factors influence the probability of survival and reproduction of a species.</p> <p>c. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, and extinction of organisms and their relationships to modern organisms</p>	<p>a. Construct an explanation for the patterns of interactions observed in different ecosystems in terms of the relationships among and between organisms and abiotic components of the ecosystem.</p> <p>b. Develop a model to describe the cycling of matter and the flow of energy among biotic and abiotic components of an ecosystem</p> <p>c. Analyze and interpret data to provide evidence for how resource availability, disease, climate, and human activity affect individual organisms, populations, communities, and ecosystems.</p>
Learning Targets for Supporting Standards	<p>I can identify how the human body is organized.</p> <p>I can identify which organs belong to which organ system.</p> <p>I can understand how body systems work together in order for organisms to stay alive.</p>	<p>I can explain that many traits of an organism are inherited from their parents.</p> <p>I can explain the relationship between alleles, genes, chromosomes, and DNA.</p> <p>I can distinguish between dominant and recessive traits.</p> <p>I can complete a Punnett square in order to determine possible genotypes and phenotypes of offspring</p>	<p>I can explain that physical characteristics of organisms have changed over time.</p> <p>I can explain how the organisms best adapted survive, reproduce, and pass on their DNA or they become extinct.</p> <p>I can explain how adaptations affect natural selection.</p> <p>I can explain humans influence the inheritance of desired traits in organisms through selective breeding (artificial selection).</p>	<p>I can gather and synthesize information to identify the needs that must be met by an organism's surroundings.</p> <p>I can identify environmental conditions that will affect the survival of species.</p> <p>I can explain relationships between communities.</p>

	Unit 9: Biomes
	<i>Approximately 2 weeks</i>
Essential Standard(s)	S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.
Learning Targets for Essential Standard(s)	I can explain the interdependence of organisms within the biosphere.
Supporting Standards	<p>a. Construct an explanation for the patterns of interactions observed in different ecosystems in terms of the relationships among and between organisms and abiotic components of the ecosystem.</p> <p>b. Develop a model to describe the cycling of matter and the flow of energy among biotic and abiotic components of an ecosystem.</p> <p>c. Analyze and interpret data to provide evidence for how resource availability, disease, climate, and human activity affect individual organisms, populations, communities, and ecosystems.</p> <p>d. Ask questions to gather and synthesize information from multiple sources to differentiate between Earth's major terrestrial biomes (i.e., tropical rain forest, savanna, temperate forest, desert, grassland, taiga, and tundra) and aquatic ecosystems (i.e., freshwater, estuaries, and marine).</p>
Learning Targets for Supporting Standards	<p>I can explain how organisms play roles to move energy through the ecosystems.</p> <p>I can describe how humans affect ecosystems.</p> <p>I can explain how matter is cycled within an ecosystem.</p> <p>I can differentiate between the world's land biomes.</p> <p>I can differentiate between the world's aquatic ecosystems.</p>