

Options FRMS Science 6A-OR		Scope and Sequence
Unit	Lesson	Objectives
Cell Structure and Function		
Cell Theory		
		Analyze the contributions of different scientists to the development of the cell theory.
		Identify the three components of the cell theory.
Cell Structure		
		Identify the organelles of a cell.
		Examine the functions of cell organelles.
Lab: Exploring Cells		
		Identify prokaryotic cells and eukaryotic cells.
		Distinguish between unicellular and multicellular organisms.
		Compare and contrast the structures of plant and animal cells.
Cellular Interactions with the Environment		
		Examine the process of diffusion.
		Analyze the effects of osmosis on cells.
		Compare and contrast active and passive transport.
Animal and Plant Cells		
		Differentiate prokaryotic and eukaryotic cells.
		Compare and contrast animal and plant cells.
		Identify the levels of organization in animals and plants.
Cell Cycle		
		Identify the three stages of the cell cycle.
		Distinguish the steps of mitosis.

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	Meiosis	<p>Identify and describe the steps of meiosis.</p> <p>Explain why meiosis is necessary for sexual reproduction.</p> <p>Differentiate meiosis from mitosis.</p>
	Asexual and Sexual Reproduction	<p>Examine the different types of asexual reproduction.</p> <p>Analyze the process of sexual reproduction.</p> <p>Compare and contrast asexual and sexual reproduction.</p> <p>Identify the advantages and disadvantages of both asexual and sexual reproduction.</p>
	Unit Test	
Genetics and Heredity		
	Genetic Code	<p>Analyze the contributions of different scientists to the discovery of the genetic code.</p> <p>Identify the components and structure of DNA.</p> <p>Relate DNA, genes, and chromosomes.</p> <p>Examine how cells make proteins.</p>
	DNA Mutations	<p>Distinguish common types of DNA mutations.</p> <p>Analyze the effects of DNA mutations on the traits of an organism.</p>
	Introduction to Heredity	<p>Examine the contributions made by Gregor Mendel to the field of genetics.</p> <p>Explain how traits are inherited.</p>

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		Distinguish dominant and recessive alleles.
		Differentiate between genotype and phenotype.
	Predicting Heredity	
		Define probability and use it to explain the results of a genetic cross.
		Determine the probability of genotype combinations using a Punnett square.
		Identify the phenotype of an organism based on its genotype.
	Inheritance Patterns	
		Differentiate between codominance and incomplete dominance.
		Examine multiple alleles and polygenic inheritance, and give examples of each.
	Lab: Heredity and Punnett Squares	
		Construct a Punnett square given the genotypes of the parents.
		Determine the possible genotypes of the offspring using a Punnett square.
		Relate the genotypes of the offspring to their phenotypes.
	Unit Test	
	Plants and Animals	
	Overview of Plants	
		Examine the characteristics common to all plants.
		Identify the things a plant needs to survive on land.
		Compare the characteristics of nonvascular and vascular plants.
	Lab: Flower Dissection	
		Dissect and describe the parts of a flower.
		Relate the parts of a flower to their roles in reproduction.

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	Overview of Animals	<p>Examine the characteristics that are common to most animals.</p> <p>Identify the main functions that allow animals to meet their basic needs.</p> <p>Compare and contrast the characteristics of invertebrate and vertebrate animals.</p>
	Diversity of Life	<p>Compare and contrast the physical characteristics of different plants.</p> <p>Compare and contrast the physical characteristics of different animals.</p> <p>Identify why the life cycles of different organisms vary.</p>
	Animal Behavior	<p>Differentiate between learned and inherited behaviors.</p> <p>Relate responses in organisms to internal stimuli.</p> <p>Determine ways in which organisms respond to external stimuli.</p> <p>Distinguish among the various patterns of behavior exhibited by animals.</p>
	Lab: Earthworm Behavior	<p>Observe and measure the physical characteristics of an earthworm.</p> <p>Examine how an earthworm responds to different external stimuli.</p>
	Unit Test	
The Human Body		
	Body Organization and Homeostasis	<p>Identify and order the levels of organization in the body.</p> <p>Analyze how organ systems function together to maintain homeostasis.</p>
	The Nervous and Endocrine Systems	

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		Identify the major structures and functions of the nervous system.
		Analyze how sensory receptors communicate with the brain in response to stimuli.
		Examine the major structures and functions of the endocrine system.
		Analyze how negative feedback works in the endocrine system.
	The Musculoskeletal and Integumentary Systems	
		Identify the major structures and functions of the musculoskeletal system.
		Compare and contrast the three types of muscle.
		Describe how bones and muscles work together to allow movement.
		Examine the major structures and functions of the integumentary system.
	The Circulatory and Respiratory Systems	
		Identify the major structures and functions of the circulatory system.
		Analyze the components of blood.
		Examine the major structures and functions of the respiratory system.
		Describe how breathing and gas exchange occur.
	The Digestive and Excretory Systems	
		Identify the major structures and functions of the digestive system.
		Examine how food is physically and chemically broken down by the digestive system.
		Identify the major structures and functions of the excretory system.
		Analyze how the kidneys work.
	The Immune System	
		Identify the major structures and functions of the immune system.
		Examine how the immune system protects the body from disease.

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		Distinguish between passive and active immunity.
	The Reproductive System	
		Identify the structures and functions of the male reproductive system.
		Examine the structures and functions of the female reproductive system.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	