

Options EHS Anatomy & Physiology A		Scope and Sequence
Unit	Lesson	Objectives
The Human Body and Genetics		
	Introduction to Anatomy and Physiology	
		Define anatomy and physiology
		Explain the goals of anatomy and physiology
		Analyze how the study of anatomy and physiology is used by medical professionals
		List the characteristics that all living things share
		Describe the elements that all living things need to survive
	Organization of the Body	
		Analyze the basic structural organization of the body
		Analyze the relationship of the levels of structural organization of the body
		Describe the major systems of the body
	Areas of Study within Anatomy	
		Identify the major areas of study within anatomy
		Differentiate between examples from different areas of study within anatomy
		Analyze the purpose of each area of study within anatomy
	Atoms and Molecules	
		Describe the structure of atoms and molecules
		Explain how atoms join to form larger structures
		Analyze the atomic composition of the human body
	The Chemistry of Life	
		Identify the chemical elements of the body
		Explain the chemical composition of the human body

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	DNA	Analyze the chemical processes that maintain life
		Define DNA and describe its overall function
		Analyze the structure and components of DNA
		Describe the process of DNA replication
		Explain DNA mutation
	Genetics	
		Define genetics
		Identify the enzymes that enable DNA replication
		Analyze the process in which RNA contributes to DNA replication
		Explain the possible future uses of the Human Genome Project
	Genetic Diseases and Disorders	
		Analyze the role of human genetics in contributing to certain genetic diseases and disorders
		Identify different types of genetic diseases and disorders
		Describe the pathology of common genetic diseases and disorders
	Heredity and Heritability	
		Analyze how traits are transmitted between generations
		Describe the difference between phenotypes and genotypes
		Explain how to estimate heritability
	Summary	
	Unit Test	

Cells

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	Introduction	
	Cells	
		Describe cells as the building blocks of human life
		Analyze the structure of cells
		Analyze the function of different cell structures
		Explain how the condition of cells can be indicators of health
	Cell Functions	
		Describe the primary functions of cells
		Analyze the processes of growth, metabolism, cell division, and protein synthesis
	The Study of Cells	
		Analyze common tools and methods used to study cells
		Describe the history of cell research
		Describe major findings in cell research
	Cell Growth and Organization	
		Explain why it is important that cells grow and divide
		Identify the four stages of the cell cycle
		Analyze how the cell cycle is regulated
		Explain the role of cell inhibitors
	Cell Division and Mitosis	
		Explain why mitosis is important
		Analyze the steps of mitosis
		Compare mitosis in plant and animal cells

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	Moving Cellular Material	Describe examples of asexual reproduction
		Describe the function of a selectively permeable membrane
		Analyze how the processes of diffusion and osmosis move molecules in living cells
		Explain how passive transport and active transport differ
	Sexual Reproduction and Meiosis	
		Analyze the stages of meiosis and how sex cells are produced
		Explain why meiosis is needed for sexual reproduction
		List the cells that are involved in fertilization
		Explain how fertilization occurs in sexual reproduction
	Energy	
		Analyze the types of energy used by the body
		Identify and describe some energy processes of the cell
		Define fermentation
	Organic Substances and Compounds	
		Analyze the relationship between compounds and substances
		Differentiate between organic and inorganic compounds
		Identify common biomolecules
	Summary	
	Unit Test	
	Tissues, Organs, and Systems	
	Introduction	

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	Tissue	<p>List the four main types of tissues</p> <p>Explain the location and functions of each type of tissue</p> <p>Analyze the relationship between the structure and function of cells and tissues</p>
	Diseased Tissues	<p>Define diseased tissue</p> <p>Identify types of tissue disease</p> <p>Explain how cells in diseased tissue differ from those in healthy tissue</p> <p>Analyze how healthy tissue becomes diseased tissue</p>
	Injuries	<p>Identify types of external injuries</p> <p>Identify types of internal injuries</p> <p>Analyze the cause and treatment of various types of external and internal injuries</p>
	Body Cavities	<p>Identify body cavities</p> <p>Identify the organs that are housed in various body cavities</p> <p>Use the proper terminology to identify body cavities</p>
	Membranes and Glands	<p>Define membranes and glands</p> <p>Analyze the structure of membranes and glands</p> <p>Identify types of membranes and glands</p> <p>Analyze the functions of membranes and glands</p>

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	Organs	<p>Define organs</p> <p>Identify organs in the human body</p> <p>Analyze organ diseases and disorders, and explain organ transplantation</p>
	Organ Systems	<p>Explain how an organ system works</p> <p>Identify the major organ systems of the body</p> <p>Analyze the ways in which the organ systems work together to support life</p>
	Homeostasis	<p>Define homeostasis</p> <p>Analyze ways in which the internal human body maintains homeostasis</p> <p>Explain the importance of homeostasis in the human body</p>
	Homeostatic Processes	<p>Describe the biological processes that maintain homeostasis</p> <p>Describe the chemical processes that maintain homeostasis</p> <p>Analyze the role of homeostasis and its mechanisms as they relate to the body as a whole</p>
	Homeostatic Disorders	<p>Identify common homeostatic disorders</p> <p>Analyze the symptoms and treatments of common homeostatic disorders</p> <p>Predict the consequences of the failure to maintain homeostasis</p> <p>Explain methods of preventing common homeostatic disorders</p>
	Summary	

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Diseases and Disorders		
	Introduction	
	Disease	Differentiate between diseases, illnesses, and disorders
		Describe common diseases and disorders
		Analyze the relationship between disease pathology, diagnosis, treatment, and prevention
	Causes of Disease	
		Define etiology
		Identify and analyze the direct causes of disease
		Identify and analyze the indirect causes of disease
		Differentiate between direct and indirect causes of disease
	Chain of Infection	
		Explain the chain of transmission of infection
		Identify common hospital-acquired infections
		Analyze how to destroy or control the spread of infections
		Explain why the blood and other body fluids are carriers for disease transmission
	Cancer	
		Identify types of cancer
		Analyze causes of cancer, including behaviors that can increase risk of cancer
		Explain methods for treating cancer
		Describe the importance of early cancer detection

Unit	Lesson	Objectives
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Summary

Unit Test

Cumulative Exam

Cumulative Exam Review

Cumulative Exam