Options EHS Biology B-OR	Scope and Sequence
Unit Lesson	**Objectives**
Evolution of Life	
Darwin's Theory	
	Summarize the main points of Darwin’s theory.
	Summarize the major concepts of natural selection.
	Explain how natural selection acts as a mechanism of evolution.
	Science Practice: Describe how scientific investigations lead to new scientific questions.
Factors Affecting Genetic Variation	
	Give examples of how environmental factors affect genetic variation and influence natural selection.
	Describe genetic drift and gene flow as mechanisms of evolution.
	Science Practice: Predict trends and outcomes based on a given set of data.
Lab: Natural Selection	
	Identify natural selection as a mechanism for the evolution of a population.
	Science Practice: Decide whether specific questions can be answered using scientific investigation.
Factors Affecting Biological Diversity	
	Explain how new or varied species originate via natural selection.
	Examine how directional, disruptive, and stabilizing selection affect biological diversity.
	Science Practice: Judge claims made by scientific explanations, data, or arguments.
Biogeographic Isolation	
	Explain the concept of biogeographic isolation.
	Analyze how new species are formed by reproductive and geographic isolation.
	Analyze the relationship between biogeographic isolation and the theory of evolution.
	Science Practice: Give examples of how hypotheses lead to new experimental methods.

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Unit	**Lesson**	**Objectives**
	Biological Evidence and the Fossil Record	
		Distinguish scientific evidence that supports the theory of evolution.
		Assess the comparative anatomies among organisms.
		Describe how the fossil record shows common ancestry between organisms.
		Science Practice: Explain the role of scientific argumentation in evaluating the validity of data, claims, hypotheses, and observations.
	Evolutionary Relationships	
		Analyze the relationships among organisms based on a variety of shared characteristics.
		Interpret evolutionary relationships among organisms on a cladogram.
		Explain how understanding evolutionary history impacts classification of organisms.
		Science Practice: Describe various ways evidence can be interpreted or explained.
	Human Evolution	
		Discuss specific hominid fossils that were key to understanding the evolution of modern humans.
		Summarize how the anatomy of humans has changed over time from scientific evidence.
		Science Practice: Inspect resources for valid information to use in research.
	Unit Test	
Taxonomy		
	Methods of Classification	
		Explain the purpose of biological taxonomy.
		Describe how organisms are classified.
		Explain reasons why systems of classification may change.
		Science Practice: Organize data using specific grouping methods.

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Unit	**Lesson**	**Objectives**
	The Kingdoms	
		Distinguish the six kingdoms of living organisms.
		Summarize the levels of biological classification.
		Compare characteristics of taxonomic groups.
		Science Practice: Organize data using specific grouping methods.
	Overview of Animals	
		Examine the characteristics that are common to most animals.
		Identify the main functions that allow animals to meet their basic needs.
		Compare and contrast the characteristics of invertebrate and vertebrate animals.
	Types of Plants	
		Summarize the origin and evolution of land plants.
		Distinguish ways that plants are grouped.
		Differentiate between gymnosperms and angiosperms.
		Science Practice: Organize data using specific grouping methods.
	Plant Structures	
		Identify the three types of plant tissue.
		Relate the structures of major plant organs and tissues to their functions.
		Describe the interactions among plant systems that allow transport, reproduction, and response.
		Science Practice: Give examples of how research affects science, society, and the environment.
	Protists and Fungi	
		Characterize the three common types of protists.
		Distinguish between the five phyla of fungi.

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Unit	**Lesson**	**Objectives**
		Relate the structures found in protists and fungi to their functions.
		Science Practice: Show how scientific evidence can affect societal decisions.
	Bacteria	
		Characterize three common forms of bacteria.
		Compare modes of bacterial reproduction.
		Explain how bacteria infects other organisms.
		Science Practice: Examine the contributions of scientists from various scientific disciplines.
	Unit Test	
The Human Body		
	Body Organization	
		Identify the levels of organization in the body.
		Analyze how organ systems function together to maintain homeostasis.
	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 Nervous System	
		Identify the structures and functions of the central nervous system.
		Differentiate the divisions of the peripheral nervous system.
		Explain how types of neurons interact to produce a response to a stimulus.
	The Circulatory and Respiratory	

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Unit	**Lesson**	**Objectives**
	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 Endocrine and Exocrine Systems	
		Illustrate the different structures of the endocrine and exocrine systems.
		Explain the functions of the endocrine and exocrine systems.
		Describe the role of hormones in maintaining homeostasis.
		Science Practice: Conduct research using a variety of sources.
	The Reproductive System	
		Investigate the structures and functions of the female reproductive system.
		Investigate the structures and functions of the male reproductive system.
		Science Practice: Evaluate data to formulate a conclusion.
	The Immune System	
		Identify the components that contribute to immune responses.
		Describe immune responses.

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Unit	**Lesson**	**Objectives**
		Explain why an individual with a compromised immune system may not be able to fight infection.
		Science Practice: Discriminate scientific claims that are socially accepted but not scientifically based.
	Viruses	
		Compare the structure of a virus to a cell.
		Describe how the structure of a virus contributes to its ability to cause infection.
		Differentiate between the lytic and lysogenic cycles of viral reproduction.
		Science Practice: Use scientific evidence to support an argument.
	Unit Test	
Ecology		
	Organizational Hierarchy	
		Describe the hierarchy of organisms, populations, communities, ecosystems, and biomes.
		Describe how organisms, populations, communities, ecosystems, and biomes are related.
		Science Practice: Examine the economic, societal, and environmental impacts of a real-world example.
	Relationships Among Organisms	
		Describe the five major types of interactions between organisms.
		Examine how symbiotic relationships can create dependency among species.
		Explain how invasive species affect the environment they occupy.
		Science Practice: Describe various ways evidence can be interpreted or explained.
	Social Behavior	
		Examine social behavior and its benefits.
		Describe examples of social behavior.
	Energy Transfer in Ecosystems	

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Unit	**Lesson**	**Objectives**
		Distinguish between producers, consumers, and decomposers.
		Explain the flow of energy through an ecosystem using food chains and food webs.
		Analyze energy pyramids and biomass pyramids.
	Biogeochemical Cycles in Ecosystems	
		Identify the four spheres of Earth.
		Explain how water, carbon, and nitrogen cycle through an ecosystem.
		Describe the importance of the water, carbon, and nitrogen cycles.
	Succession and Extinction	
		Identify and explain the stages of succession in an ecosystem.
		Identify factors that may disturb ecosystem stability.
		Assess the importance of biodiversity in an ecosystem.
		Science Practice: Locate data on a table and relate that data to a corresponding graph.
	Populations and the Environment	
		Determine biotic and abiotic factors within an ecosystem.
		Demonstrate how an organism’s habitat determines its niche.
		Compare and contrast positive and negative interactions between organisms and their environment.
		Science Practice: Distinguish between and give examples of observation and inference.
	Population Size and Structure	
		Explain how birth rate, death rate, immigration, and emigration affect population size.
		Describe the limiting factors that affect a population in a given environment.
		Differentiate between density-dependent and density-independent factors.
		Science Practice: Evaluate the impact of science and technology on society.

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Unit	**Lesson**	**Objectives**
	Population Growth	
		Identify factors that affect population growth.
		Compare and contrast exponential and logistic growth models.
		Determine factors that influence a species' carrying capacity.
		Science Practice: Predict trends and outcomes based on a given set of data.
	Human Impact on the Environment	
		Relate the greenhouse effect to global warming and explain its impact on the environment.
		Analyze how human populations affect resources.
		Give examples of human activities that have been beneficial and detrimental to the environment.
		Science Practice: Give examples of science contributions impacting sustainability.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	