

AP Biology - SC5182		Scope and Sequence
Unit	Lesson	Objectives
Biochemistry		
	Introduction to AP Biology	<p>Describe the components of the AP Biology course.</p> <p>Describe the skills necessary to be successful in an AP Biology course.</p>
	Reading Lesson - Chapter 2 (The Chemical Context of Life)	
	The Structure, Properties, and Bonding of Water	<p>Relate the molecular structure of water to its polar nature.</p> <p>Describe how the bonds between water molecules lead to the properties of water.</p> <p>Explain how the properties of water are important to life on Earth.</p> <p>Describe the effect of buffers, acids, and bases on organisms and their environment.</p>
	Reading Lesson - Chapter 3 (Carbon and the Molecular Diversity of Life)	
	The Elements of Life	<p>Explain why organisms need to exchange matter with the environment.</p> <p>Differentiate elements and compounds.</p> <p>Relate the structure of the atoms of an element to the element's properties.</p> <p>Construct an explanation as to how chemical bonds affect the formation and function of molecules.</p> <p>Explain how molecules are formed and broken down.</p>
	An Introduction to Biological Macromolecules	<p>Describe the properties of monomers.</p> <p>Characterize the type of bond that forms between monomers.</p> <p>Compare the reactions involved in the formation and breakdown of polymers.</p>

Unit Lesson**Objectives**

The Properties of Biological Macromolecules

Describe the properties of nucleotides.

Explain how the amino acid sequence of proteins affects the protein's shape and function.

Analyze how the characteristics of sugar monomers affect the properties and function of complex carbohydrates.

Relate the properties of lipids to its function.

The Structure and Function of Biological Macromolecules

Describe the structure and formation of nucleic acids.

Describe the structure of DNA.

Compare the types of protein structure.

Determine how the structure of a protein affects its function.

Differentiate linear and branched carbohydrate polymers.

The Structure of Nucleic Acids

Analyze how DNA and RNA are structurally similar.

Differentiate the structure of DNA and RNA.

Describe how the structural similarities and differences between DNA and RNA are related to their function.

Skills Lesson: Short Essay

Describe the skills necessary to be successful writing a short free response.

Practice writing a short free response.

Skills Lesson: Experimental Design

Develop a refined scientific question that guides an investigation.

Evaluate scientific questions.

Unit Lesson

Objectives

Justify the selection of data in an inquiry investigation.

Design an inquiry investigation to answer a scientific question.

Skills Lesson: Displaying and Analyzing Data

Justify the type of data and data analysis needed to answer a scientific question.

Describe the different ways to display data.

Use charts to analyze data.

Create charts using a spreadsheet application.

Skills Lesson: Statistical Analysis of Data

Describe different types of data.

Apply statistical models to analyze data.

Analyze data collected in an investigation.

Justify the type of data and data analysis needed to answer a scientific question.

Unit 1 Test

Describe how the properties of water affect its biological function.

Explain the composition of biological macromolecules.

Describe the structure, properties, and bonds that link monomers to create biological macromolecules.

Describe how a change in the subcomponents of a biological macromolecule can result in changes in its structure and/or function.

Describe the properties of the monomers and the type of bonds that connect the monomers in biological macromolecules.

Explain how a change in the subunits of a polymer may lead to changes in structure or function of the macromolecule.

Explain how the properties of water that result from its polarity and hydrogen bonding affect its biological function.

Unit Lesson

Objectives

Cells

Introduction to Unit 2

Reading Lesson - Chapter 4 (A Tour of the Cell)

Components of Cells

Distinguish prokaryotic and eukaryotic cells.

Compare plant and animal cells.

Examine the structure and/or function of cell components and organelles.

Describe the function of the extracellular matrix.

Explain how the structure of cells points to a common ancestor.

Structure and Function of Cells

Explain how organelles and subcellular structures support the functions of the cell.

Examine how the cell's structures allow organisms to capture, store, and use energy.

Cell Size

Analyze the relationship between a cell's size and surface area-to-volume ratio.

Explain how surface area-to-volume ratios affect cells, organisms, and biological systems.

Describe the structures and strategies used by organisms to efficiently exchange materials with the environment.

Lab: Cell Size

Explain the effect of cell size and shape on a cell's ability to maintain homeostasis.

Apply mathematical models involving surface area to volume ratios.

Make predictions based upon the results of surface area to volume calculations.

Reading Lesson - Chapter 5 (Membrane Transport and Cell Signaling)

Unit	Lesson	Objectives
	Cell Membrane	Describe the structure of the cell membrane. Explain how the components of the cell membrane help maintain the internal environment of the cell.
	Cell Membrane Permeability	Relate the structure of the cell membrane to its permeability. Explain how the permeability of the cell membrane affects the movement of materials across the membrane. Describe the structure and function of cell walls.
	Transport across Membranes	Describe how organisms maintain water and solute balance. Compare passive and active transport. Distinguish between endocytosis and exocytosis. Explain how the permeability of membranes allows for the formation of concentration gradients.
	Facilitated Diffusion	Compare active transport and facilitated diffusion. Explain how ion pumps maintain membrane potential. Explain how the ability of a molecule to pass through the cell membrane is affected by the molecule's structure. Examine how membrane proteins assist in the transport of molecules and ions across the cell membrane. Differentiate channel and carrier proteins.
	Osmoregulation	Describe how concentration gradients affect the transport of molecules across membranes. Differentiate the effect of hypotonic, hypertonic, and isotonic environments on cells.

Unit Lesson

Objectives

Analyze the mechanisms that help organisms maintain internal environments.

Calculate the solute and water potential of solutions.

Examine the relationship between solute and water potential.

Lab: Tonicity and Osmoregulation

Predict the effect of cell size and shape on osmoregulation.

Apply mathematical models involving water potential.

Investigate whether homeostasis is maintained by the movement of particles across membranes.

Transport Mechanisms

Summarize the mechanisms involved in the movement of materials across the cell membrane.

Examine how the knowledge of transport mechanisms has impacted medicine and technology.

Cell Compartmentalization

Describe cell compartmentalization.

Explain how cell compartmentalization allows the organelles of the cell to perform their functions efficiently.

Evolution of Compartmentalization in Cells

Compare prokaryotic and eukaryotic cell compartmentalization.

Describe the origins of cell compartmentalization.

Relate the functions of mitochondria and chloroplasts to their ancestral counterparts.

Unit 2 Test

Explain the structure and function of subcellular components and organelles.

Describe the contributions of subcellular components and organelles to cell function.

Describe the structural features of a cell that allow organisms to capture, store, and use energy.

Explain the effect of surface area-to-volume ratios on the exchange of materials between cells or

Unit Lesson

Objectives

organisms and the environment.

Describe the Fluid Mosaic Model of cell membranes.

Explain how the structure of biological membranes influences selective permeability.

Describe the role of the cell wall in maintaining cell structure and function.

Describe the mechanisms that organisms use to maintain solute and water balance.

Describe the mechanisms that organisms use to transport large molecules across the plasma membrane.

Explain how the structure of a molecule affects its ability to pass through the plasma membrane.

Explain how concentration gradients affect the movement of molecules across membranes.

Describe similarities and/or differences in compartmentalization between prokaryotic and eukaryotic cells.

Enzymes and Metabolism

Introduction to Unit 3

Reading Lesson - Chapter 6 (An Introduction to Metabolism)

Structure of Enzymes

Describe the structure and properties of enzymes.

Examine the importance of enzyme active site and substrate specificity.

Function of Enzymes

Describe enzymes.

Explain how enzymes facilitate chemical reactions.

Enzyme Activity

Explain the causes and effects of changes in the structure of enzymes.

Unit Lesson

Objectives

Explain the effects of environmental conditions on enzyme activity.

Lab: Enzyme Activity

Design a plan for collecting data to show that all biological systems are affected by complex biotic and abiotic interactions.

Use models to predict and justify that changes in the subcomponents of a biological polymer affect the functionality of the molecule.

Analyze data and identify how molecular interactions affect structure and function.

Energy and Life

Describe the role of energy in living organisms.

Explain why highly ordered systems do not violate the second law of thermodynamics.

Analyze how energy is efficiently transferred in metabolic pathways.

Photosynthesis

Describe the importance of photosynthesis.

Examine how light energy is absorbed and transformed to chemical energy during the light-dependent reactions of photosynthesis.

Explain how the chemical energy from the light-dependent reactions is used to produce sugars in the light-independent reactions (Calvin cycle).

Support the claim that cyanobacterial photosynthesis created an oxygenated atmosphere.

Describe the evolution of photosynthesis.

Lab: Photosynthesis

Analyze data and identify how molecular interactions affect structure and function.

Construct explanations based on scientific evidence as to how interactions of subcellular structures provide essential functions.

Justify the scientific claim that organisms share many conserved core processes and features that evolved and are widely distributed among organisms today.

Unit Lesson

Objectives

Justify the scientific claim that free energy is required for living systems.

Apply mathematical routines to describe interactions among living systems.

Reading Lesson - Chapter 7 (Cellular Respiration and Fermentation)

Cellular Respiration

Explain the importance of cellular respiration.

Describe the stages of cellular respiration.

Examine alternative glucose breakdown pathways.

Variation and Fitness

Account for the variation within and among cells.

Relate the variation of molecules within cells to the ability of organisms to survive and reproduce in different environments.

Unit 3 Test

Describe the properties of enzymes.

Explain how enzymes affect the rate of biological reactions

Explain how changes to the structure of an enzyme may affect its function.

Explain how the cellular environment affects enzyme activity.

Describe the role of energy in living organisms.

Describe the photosynthetic processes that allow organisms to capture and store energy.

Explain how cells capture energy from light and transfer it to biological molecules for storage and use.

Describe the processes that allow organisms to use energy stored in biological macromolecules.

Explain how cells obtain energy from biological macromolecules in order to power cellular functions.

Explain the connection between variation in the number and types of molecules within cells to the ability of the organism to survive and/or reproduce in different environments.

Unit Lesson

Objectives

Cell Communication and Cell Cycle

Introduction to Unit 4

Communication between Cells

Describe the importance of cell communication.

Explain how cells that are in direct contact or are adjacent communicate.

Describe how cells communicate with one another over short and long distances.

Reading Lesson - Concept 5.6 (Cell Signaling)

Introduction to Signal Transduction

Explain the function of signal transduction pathways in cell communication.

Describe the role of the components of a signal transduction pathway in cell communication.

Analyze how cells respond to signals.

Signal Transduction

Describe how signal transduction pathways impact how a cell responds to its environment.

Explain how signal transduction affects gene expression and cell function.

Alteration of Signal Transduction Pathways

Analyze the effect of mutations on signal transduction.

Examine how chemicals interfere with signal transduction pathways.

Feedback

Compare negative and positive feedback mechanisms.

Explain the role of negative and positive feedbacks in organisms.

Reading Lesson - Chapter 9 (The Cell Cycle)

Cell Cycle and Mitosis

Unit Lesson

Objectives

Describe the stages and events of the cell cycle.

Explain the role of mitosis in the transmission of genetic information from one generation to the next.

Cell Cycle Regulation and Disruptions

Explain the importance of cell cycle regulation.

Examine the control system involved in the regulation of the cell cycle.

Describe the effect of disruptions in the cell cycle.

Skills Lesson: Long Essay

Understand the long free response question section of the AP exam.

Be able to plan and write a long free response answer.

Skills Lesson: Data-Based Essay

Describe the skills necessary to be successful writing a data-based essay.

Practice writing a data-based essay.

Unit 4 Test

Explain the method by which cells communicate.

Explain how cells communicate with one another over short and long distances.

Describe the components of a signal transduction pathway.

Describe the role of components of a signal transduction pathway in producing a cellular response.

Describe the different types of cellular responses elicited by a signal transduction pathway.

Explain how a change in the structure of any signaling molecule affects the activity of the signaling pathway.

Explain how negative feedback helps to maintain homeostasis

Describe the events that occur in the cell cycle.

Explain how mitosis results in the transmission of chromosomes from one generation to the next.

Unit Lesson**Objectives**

Describe the role of checkpoints in regulating the cell cycle.

Describe the effects of disruptions to the cell cycle on the cell or organism.

Cumulative Exam I

Cumulative Exam

Heredity

Introduction to Unit 5

Reading Lesson - Chapter 10 (Meiosis and Sexual Life Cycles)

Meiosis

Explain the role of meiosis in heredity.

Describe the phases and outcome of meiosis.

Compare meiosis and mitosis.

Meiosis and Genetic Diversity

Explain how sexual reproduction in eukaryotes allows for genetic variation.

Analyze the meiotic processes that result in genetic diversity.

Describe how fertilization contributes to genetic variation.

Lab: Mitosis and Meiosis

Make predictions about natural phenomena occurring during the cell cycle.

Construct an explanation about how DNA is transmitted to the next generation via mitosis or meiosis.

Explain the connection between meiosis and genetic variation.

Evaluate evidence provided by data sets to support the claim that inheritable information is passed from one generation to the next.

Construct a representation that connects the process of meiosis to the passage of traits from parent to offspring.

Unit Lesson**Objectives**

Reading Lesson - Chapter 11 (Mendel and the Gene Idea)

Mendelian Inheritance

Describe features and processes that support the idea of common ancestry for all organisms.

Examine Gregor Mendel's experiments.

Explain Mendel's laws of inheritance.

Analyze transmission of traits using probability rules.

Use the chi-square test to analyze data.

Reading Lesson - Chapter 12 (The Chromosomal Basis of Inheritance)

Non-Mendelian Inheritance

Describe inheritance patterns that deviate from the Mendelian model of inheritance.

Use statistical analysis to show the trait ratios of non-Mendelian inheritance patterns.

Examine sex-linked inheritance.

Describe how non-nuclear genes are transmitted.

Effect of the Environment on Phenotype

Describe how environmental conditions affect gene expression.

Examine examples of how the environment affects phenotype.

Chromosomal Inheritance

Explain how chromosomal inheritance produces genetic variation in sexual reproduction.

Connect chromosomal behavior to the transmission pattern of genes.

Examine the effect of changes in the structure and number of human chromosomes.

Unit 5 Test

Unit Lesson**Objectives**

Explain how meiosis results in the transmission of chromosomes from one generation to the next.

Describe similarities and/or differences between the phases and outcomes of mitosis and meiosis.

Explain how the process of meiosis generates genetic diversity.

Explain how shared, conserved, fundamental processes and features support the concept of common ancestry for all organisms.

Explain the inheritance of genes and traits as described by Mendel's laws.

Explain deviations from Mendel's model of the inheritance of traits (i.e., non-Mendelian genetics).

Explain how the same genotype can result in multiple phenotypes under different environmental conditions.

Explain how chromosomal inheritance generates genetic variation in sexual reproduction.

Gene Expression

Introduction to Unit 6

DNA and RNA Structure

Describe how scientists identified the main molecules involved in the inheritance of genetic information.

Compare the inheritance structures of prokaryotic and eukaryotic organisms.

Relate the structure and characteristics of the inheritance molecules to their function.

Reading Lesson - Chapter 13 (The Molecular Basis of Inheritance)

DNA Replication

Differentiate DNA replication models.

Describe the mechanisms involved in DNA replication.

Explain how errors in the DNA replication process are corrected.

Transcription and RNA Processing

Unit Lesson

Objectives

Outline the flow of genetic information in protein synthesis.

Describe the structures of DNA and RNA.

Distinguish the three types of RNA in protein synthesis.

Outline the flow of genetic information in protein synthesis.

Describe the steps involved in transcription.

Explain how mRNA is processed in eukaryotic cells.

Reading Lesson - Chapter 14 (Gene Expression from Gene to Protein)

Translation

Describe the features and steps of translation.

Compare prokaryotic and eukaryotic translation.

Explain how genetic information flows in retroviruses.

Reading Lesson - Chapter 15 (Regulation of Gene Expression)

Gene Expression Regulation

Explain the interactions involved in gene expression regulation.

Describe prokaryotic and eukaryotic gene expression regulation.

Cell Specialization

Describe how transcription factors and promoters affect gene expression and the phenotype of an organism.

Relate gene expression regulation to phenotypic differences in cells and organisms.

Mutations

Differentiate the types of mutations.

Explain how mutations occur.

Unit Lesson

Objectives

Describe how mutations affect the phenotypes of organisms.

Analyze how mutations influence an organism's ability to survive and reproduce.

Biotechnology

Describe the importance of biotechnology.

Explain how common genetic engineering techniques are used.

Lab: Biotechnology

Explain how heritable information can be manipulated using common genetic engineering techniques.

Use genetic engineering techniques to analyze genetic fingerprints.

Apply mathematical processes to solve a problem.

Justify the claim that heritable information can be manipulated.

Identify and question ethical, social, or medical issues surrounding human genetic disorders.

Unit 6 Test

Describe the structures involved in passing hereditary information from one generation to the next

Describe the characteristics of DNA that allow it to be used as the hereditary material.

Describe the mechanisms by which genetic information is copied for transmission between generations.

Describe the mechanisms by which genetic information flows from DNA to RNA to protein.

Describe how the phenotype of an organism is determined by its genotype.

Describe the types of interactions that regulate gene expression

Explain how the location of regulatory sequences relates to their function.

Explain how the binding of transcription factors to promoter regions affects gene expression and/or the phenotype of the organism.

Explain the connection between the regulation of gene expression and phenotypic differences in cells and organisms.

Unit Lesson

Objectives

Describe the various types of mutation.

Describe the various types of mutation.

Explain how changes in genotype may result in changes in phenotype.

Explain how alterations in DNA sequences contribute to variation that can be subject to natural selection.

Explain the use of genetic engineering techniques in analyzing or manipulating DNA.

Evolution and Genetic Diversity

Introduction to Unit 7

Introduction to Natural Selection

Characterize evolution.

Describe the conditions necessary for natural selection to occur.

Analyze how populations are affected by natural selection

Natural Selection

Explain how natural selection acts on phenotypic variations in populations.

Describe how environmental changes apply selective pressures on populations.

Explain how phenotypic variations affect the fitness of organisms in particular environments.

Artificial Selection

Describe how humans change the diversity within populations.

Connect environmental changes to evolutionary changes in populations.

Virtual Lab: Artificial Selection

Analyze how natural selection affects populations.

Describe how humans can affect diversity within a population.

Model natural and artificial selection.

Unit Lesson

Objectives

Apply mathematical methods and conceptual knowledge to investigate the cause and effect of natural and artificial selection.

Use data to support the claim that natural and artificial selection are mechanisms of evolution.

Relate evolutionary changes to changes in the environment.

Reading Lesson - Chapter 21 (The Evolution of Populations)

Evolution of Populations

Describe how changes in genetic variation affect populations.

Analyze how random occurrences cause the evolution of populations.

Hardy-Weinberg Equilibrium

Characterize a population in Hardy-Weinberg equilibrium.

Use the Hardy Weinberg equation to calculate allele frequencies.

Describe the effects of disturbing a population in Hardy-Weinberg equilibrium.

Virtual Lab: Hardy-Weinberg

Model a population in Hardy-Weinberg equilibrium.

Analyze the mechanisms that disrupt a population in Hardy-Weinberg equilibrium.

Use data from a simulation to analyze how natural selection, migration, and genetic drift affect allele and genotype frequencies.

Use data as evidence to justify that natural selection, migration, and genetic drift are mechanisms of evolution.

Evidence for Evolution

Describe the types of data used to support evolution.

Relate the shared features of the domains of life to common ancestry.

Analyze how data serves as evidence that evolution has occurred.

Unit	Lesson	Objectives
	Reading Lesson-Chapter 23 (Broad Patterns of Evolution)	
	Common Ancestry	
		Differentiate the domains of life.
		Provide evidence for common ancestry in eukaryotes.
	Continuing Evolution	
		Analyze evidence that shows that life on Earth continues to evolve.
		Create a timeline to represent evolutionary history.
	Reading Lesson - Chapter 20 (Phylogeny)	
	Phylogeny	
		Describe phylogenetic trees and cladograms.
		Analyze phylogenetic trees and cladograms.
		Create phylogenetic trees and cladograms.
	Reading Lesson - Chapter 22 (The Origin of Species)	
	Speciation	
		Define species and speciation.
		Describe conditions that lead to the appearance of new species.
		Examine the effect of ecological conditions on evolution and speciation.
		Describe the mechanisms involved in speciation.
	Extinction	
		Examine the causes and effects of extinctions.

Unit Lesson

Objectives

Variations in Populations

Analyze how extinction affects species diversity.

Analyze the role genetic diversity plays in a population's ability to survive environmental changes.

Explain how different selective pressures affect populations in varying environmental conditions.

Origin of Life on Earth

Describe the models used to explain the origin of life on Earth.

Analyze the scientific evidence that supports the origin of life models.

Unit 7 Test

Describe the causes of natural selection.

Explain how natural selection affects populations

Describe the importance of phenotypic variation in a population

Explain the relationship between changes in the environment and evolutionary changes in the population.

Explain how random occurrences affect the genetic makeup of a population

Describe the change in the genetic makeup of a population over time.

Describe the conditions under which allele and genotype frequencies will change in populations

Explain the impacts on the population if any of the conditions of Hardy-Weinberg are not met.

Explain how morphological, biochemical, and geologic data provide evidence that organisms have changed over time.

Describe the fundamental molecular and cellular features shared across all domains of life, which provide evidence of common ancestry.

Explain how evolution is an ongoing process in all living organisms.

Describe the types of evidence that can be used to infer an evolutionary relationship

Explain how a phylogenetic tree and/or cladogram can be used to infer evolutionary relatedness.

Unit Lesson

Objectives

Describe the conditions under which new species may arise.

Describe the rate of evolution and speciation under different ecological conditions.

Explain the processes and mechanisms that drive speciation.

Explain how the risk of extinction is affected by changes in the environment.

Explain how the genetic diversity of a species or population affects its ability to withstand environmental pressures

Describe the scientific evidence that provides support for models of the origin of life on Earth.

Ecology

Introduction to Unit 8

Responses

Describe ways organisms respond to stimuli, and how specific responses increase fitness.

Describe ways organisms respond to stimuli, and how specific responses increase fitness.

Explain the ways that organisms learn and cooperate, and how these behaviors increase fitness.

Lab: Response to the Environment

Design a controlled experiment to determine how an organism responds to environmental changes.

Investigate the relationship between the behavior of an organism and its environment.

Describe how the behavioral and physiological responses of an organism affect its overall fitness.

Reading Lesson - Chapter 42 (Ecosystems and Energy)

Energy Flow

Describe the role of autotrophs and heterotrophs in the flow of energy within an ecosystem.

Explain the strategies used by organisms to obtain and use energy.

Unit Lesson

Objectives

Analyze how changes in energy availability affect organisms, populations, and ecosystems.

Lab: Energy Flow through Ecosystems

Design and conduct an experiment to investigate energy flow through ecosystems.

Analyze energy flow using mathematical models.

Explain energy dynamics including productivity and community interactions.

Reading Lesson - Chapter 40 (Population Ecology and the Distribution of Organisms)

Population Ecology

Examine the factors that influence population growth dynamics.

Use mathematical and graphical models to analyze population growth.

Density of Populations

Examine the relationship between the density of a population and resource availability.

Use a mathematical model to show a change in a population size over time.

Reading Lesson - Chapter 41 (Ecological Communities)

Community Ecology

Describe the structure of a community based on its species composition and diversity.

Analyze how interactions within and between populations affect community structure.

Explain the relationship between community structure and energy availability.

Reading Lesson-Chapter 43 (Conservation Biology and Global Change)

Biodiversity

Relate the diversity of an ecosystem to its ability to withstand environmental changes.

Describe factors that help maintain diversity in an ecosystem.

Unit Lesson

Objectives

Explain how a change in a component of an ecosystem affects the structure of the ecosystem.

Changes in Ecosystems

Describe the interaction between the environment and variations in populations.

Analyze how human activities affect ecosystems.

Examine the effect of invasive species on ecosystems.

Explain how ecosystems change as a result of geological and meteorological events.

Unit 8 Test

Explain how the behavioral and/or physiological response of an organism is related to changes in internal or external environment

Explain how the behavioral responses of organisms affect their overall fitness and may contribute to the success of the population.

Describe the strategies organisms use to acquire and use energy.

Explain how changes in energy availability affect populations and ecosystems

Explain how the activities of autotrophs and heterotrophs enable the flow of energy within an ecosystem.

Describe factors that influence growth dynamics of population

Explain how the density of a population affects and is determined by resource availability in the environment.

Describe the structure of a community according to its species composition and diversity.

Explain how interactions within and among populations influence community structure

Explain how community structure is related to energy availability in the environment.

Describe the relationship between ecosystem diversity and its resilience to changes in the environment.

Explain how the addition or removal of any component of an ecosystem will affect its overall short-term and long-term structure.

Unit Lesson**Objectives**

Explain the interaction between the environment and random or preexisting variations in populations.

Explain how invasive species affect ecosystem dynamics.

Describe human activities that lead to changes in ecosystem structure and/or dynamics.

Explain how geological and meteorological activity leads to changes in ecosystem structure and/or dynamics.

Cumulative Exam II

Cumulative Exam

Review

Taking the AP Exam

List the components of the AP Biology exam.

Describe how to prepare for the AP Biology exam.

Analyze exam questions.

Review Units 1–2

Review Units 3–4

Review Units 5–6

Review Units 7–8

AP Biology Practice Exam I

AP Biology Practice Exam II