



Southmoreland School District

Biology CP Curriculum Overview

Biology Overview:

CP Biology is designed to give students experience in exploring and examining core concepts in biological science. These core concepts include scientific process, biochemistry, cell biology, genetics, evolution, ecology and life forms. Laboratory activities are an important part of the biological science experience. In addition to core concepts, CP Biology develops skills required for a successful transition to college-level course work. These skills include writing, critical thinking, organization and independent study skills.

Module Titles:

Module 1: Introduction to Biology

Module 2: Biochemistry

Module 3: Cells and Cell Processes

Module 4: Heredity

Module 5: Molecular Genetics and Technology

Module 6: Evolution

Module 7: Ecology

Module Overviews:

Module 1: Introduction to Biology

Students will use scientific thinking, processes, tools, and technology to study biology determining relationships between structure and function of all living organisms.

Module 2: Biochemistry

Students will explain the chemical basis of life by describing the properties of water, formation of polymers by enzyme regulated reactions to create carbohydrates, lipids, proteins, and nucleic acids.

Module 3: Cells and Cell Processes

Students will explain the characteristics of all prokaryotic and eukaryotic cells by examining organelle structure and function including membrane transport, bioenergetics (photosynthesis and cellular respiration), and cell life cycles to maintain homeostasis.

Module 4: Heredity

Students will explain the hereditary process by examining the cell cycles of mitosis and meiosis to determine the relationship between DNA, genes, alleles and chromosomes in order to observe patterns of inheritance.



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Module 5: Molecular Genetics and Technology

Students will explain the process, and manipulation of the process, of turning a gene into a physical trait by examining transcription and translation, mutations, and genetic engineering techniques.

Module 6: Evolution

Students will explain how species change over time by examining evidence of genotypic and phenotypic modification resulting in speciation observed on present day earth.

Module 7: Ecology

Students will describe how nature is organized by determining biotic factors, abiotic factors, species interactions, energy flow and nutrients(matter) cycles to evaluate human impacts on natural systems.