

Biology Scope and Sequence

1st Six Weeks

Safety Science

The student will....

1. be introduced to policies and procedures concerning classroom safety.
2. discuss the importance of following safety procedures and the cause and effects of science laboratory accidents.

Evidence Based Thinking

The students will be introduced to scientific critical thinking skills and how to conduct a controlled experiment and evaluate promotional claims.

Biochemistry

The student will...

1. recognize basic chemistry, specifically bonding, biomolecules and the chemicals important to living systems.
2. conduct investigations identifying the presence of biomolecules in foods.
3. design and conduct an investigation on enzyme action.

Comparing Cells and Cell Structure

The student will be introduced to different cellular organelles and their functions, enabling them to recognize organelles that are common to all cell types and unique to specific cell types.

2nd Six Weeks

Homeostasis and Membrane Transport

The student will know the structure and function of the plasma membrane allow it to maintain homeostasis for the organism and how organisms have an internal balancing system.

Energy Conversion

The student will understand the transfers of energy, photosynthesis, and cellular respiration that allow organisms to maintain metabolic activity.

Cellular Reproduction

The student will understand the process of cellular reproduction, the importance of the cell cycle, events that transpire during nuclear division, and the significance of disruptions in the process.

Introduction into Genetic and Heredity

The student will learn of the structures and functions of nucleic acids in the mechanisms of genetics and heredity.

3rd Six Weeks

Continuation of Genetic/Heredity

The student will learn about the chromosomal structure

Evolution

The student will know the theory of biological evolution

4th Six Weeks

Classification

The student will...

1. develop and use the taxonomic key
2. identify characteristics of kingdoms including monerans, protists, fungi, plants and animals.

Microorganism

The student will compare and contrast the structures and functions of viruses and other microorganisms

5th Six Weeks

Plants

The student will know the significance of plants to the environment

Animals

The student will interpret the functions of vertebrate animals and distinguish them from invertebrate animals

Organ Systems

The student will investigate and evaluate the interrelationships between the human body systems

Introduction into Ecology

The student will know that living systems are found within other systems in the environment

6th Six Weeks

Continuation of Ecology

The student will know all levels of nature