

| OPTIONS FRMS Science 6 A |   | Scope and Sequence   |
|--------------------------|---|--|
| Unit                     | Lesson  | Objectives   |
| <b>The Human Body</b>    |   |  |
|                          | Body Organization and Homeostasis             | <p>Identify and order the levels of organization in the body.</p> <p>Analyze how organ systems function together to maintain homeostasis.</p>  |
|                          | The Nervous and Endocrine Systems             | <p>Identify the major structures and functions of the nervous system.</p> <p>Analyze how sensory receptors communicate with the brain in response to stimuli.</p> <p>Examine the major structures and functions of the endocrine system.</p> <p>Analyze how negative feedback works in the endocrine system.</p> |
|                          | The Musculoskeletal and Integumentary Systems | <p>Identify the major structures and functions of the musculoskeletal system.</p> <p>Compare and contrast the three types of muscle.</p> <p>Describe how bones and muscles work together to allow movement.</p> <p>Examine the major structures and functions of the integumentary system.</p>                   |
|                          | The Circulatory and Respiratory Systems       | <p>Identify the major structures and functions of the circulatory system.</p> <p>Analyze the components of blood.</p> <p>Examine the major structures and functions of the respiratory system.</p> <p>Describe how breathing and gas exchange occur.</p>   |
|                          | The Digestive and Excretory Systems           | <p>Identify the major structures and functions of the digestive system.</p>  |

**Unit Lesson**

**Objectives**

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 Immune System

Identify the major structures and functions of the immune system.

Examine how the immune system protects the body from disease.

Distinguish between passive and active immunity.

The Reproductive System

Identify the structures and functions of the male reproductive system.

Examine the structures and functions of the female reproductive system.

Unit Test

**Genetics and Heredity**

Genetic Code

Analyze the contributions of different scientists to the discovery of the genetic code.

Identify the components and structure of DNA.

Relate DNA, genes, and chromosomes.

Examine how cells make proteins.

DNA Mutations

Distinguish common types of DNA mutations.

Analyze the effects of DNA mutations on the traits of an organism.

Introduction to Heredity

Examine the contributions made by Gregor Mendel to the field of genetics.

**Unit Lesson**

**Objectives**

Explain how traits are inherited.

Distinguish dominant and recessive alleles.

Differentiate between genotype and phenotype.

Predicting Heredity

Define probability and use it to explain the results of a genetic cross.

Determine the probability of genotype combinations using a Punnett square.

Identify the phenotype of an organism based on its genotype.

Inheritance Patterns

Differentiate between codominance and incomplete dominance.

Examine multiple alleles and polygenic inheritance, and give examples of each.

Lab: Heredity and Punnett Squares

Construct a Punnett square given the genotypes of the parents.

Determine the possible genotypes of the offspring using a Punnett square.

Relate the genotypes of the offspring to their phenotypes.

Unit Test

**Energy in Earth's Atmosphere**

Structure and Composition of the Atmosphere

Describe the composition of Earth's atmosphere.

Describe the importance of the atmosphere to living things.

Identify properties of air, including pressure and density.

Explain how altitude affects air pressure and density.

Distinguish the four main layers of the atmosphere.

**Unit Lesson**

**Objectives**

Energy in the Atmosphere

Identify the types of energy that travel from the Sun to Earth.

Explain what happens when the Sun's energy reaches Earth.

Distinguish the three ways in which heat is transferred.

Lab: Energy Transfer

Differentiate between the processes of conduction, convection, and radiation.

Explain the role of heat transfer processes in the distribution of energy on Earth.

Winds

Examine the processes that cause wind.

Differentiate between local and global winds.

Locate the major global wind belts.

Atmospheric Moisture and Precipitation

Describe humidity and how it is measured.

Explain how clouds form.

Distinguish the three main types of clouds.

Identify common types of precipitation.

Air Masses and Fronts

Identify the major types of air masses.

Explain how air masses move.

Differentiate the four main types of fronts.

Storms

Explain how various storms form.

**Unit Lesson**

**Objectives**

Describe the effects of various storms on humans and the environment.

Identify measures that can be taken to stay safe in a storm.

Weather Forecasting

Describe basic elements of meteorology.

Describe what information can be gained from a weather map.

Lab: Weather Patterns

Identify weather systems and fronts utilizing a weather map.

Examine the influence of atmospheric conditions on weather patterns.

Utilize weather station data to analyze weather patterns.

Unit Test

**Climate Change**

Environmental Changes

Identify examples of short-term and long-term environmental changes.

Identify the impacts of short-term and long-term environmental changes on organisms and ecosystems.

Predict how environmental changes will affect organisms and ecosystems.

Erosion and Deposition

Describe erosion and deposition.

Differentiate types of mass movement.

Lab: Modeling Water Erosion

Identify factors that affect erosion and deposition by rivers.

Model stream processes and observe stream behavior.

Natural Environmental Change

**Unit Lesson**

**Objectives**

Identify examples of natural short-term environmental changes.

Identify examples of natural long-term environmental changes.

Assess the impact of natural environmental changes on organisms, populations, and species.

Test

**Cumulative Exam**

Cumulative Exam Review

Cumulative Exam