

OPTIONS FRMS Science 6 B		Scope and Sequence
Unit	Lesson	Objectives
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		
		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		
Energy and Its Forms		
Introduction to Energy		
		Define energy.
		Explain how energy and work are related.
		Identify and describe the different forms of energy.
Potential and Kinetic Energy		

Unit Lesson

Objectives

Distinguish between potential and kinetic energy.

Calculate the potential energy in a system.

Calculate the kinetic energy in a system.

Explain how energy is transferred in a moving system.

Lab: Kinetic Energy

Calculate the kinetic energy of objects of different mass.

Determine the kinetic energy of objects at different speeds.

Graph data to illustrate changes in kinetic energy.

Temperature and Thermal Energy

Explain how temperature relates to kinetic energy.

Describe how temperature is measured.

Convert temperature readings between different temperature scales.

Describe how thermal energy relates to temperature.

Heat

Distinguish between heat and thermal energy.

Predict how thermal energy flows between objects at different temperatures.

Explain why some substances change temperature more easily than others.

Conduction

Explain how molecular movement transfers thermal energy by conduction.

Distinguish between insulators and conductors.

Unit Lesson

Objectives

Convection

Identify situations in which conduction occurs.

Explain how fluid movement transfers thermal energy by convection.

Describe the motion of liquids and gases due to convection.

Identify situations in which convection occurs.

Radiation

Explain how electromagnetic waves transfer energy by radiation.

Describe the role of color and texture in absorbers and reflectors.

Identify situations in which radiation occurs.

Unit Test

Engineering

Technological Design

Describe the process of technological design.

Identify the limitations of a design problem.

Explain the relationship between science and technology.

Technological Design

Describe the four stages of technological design.

Evaluate a technological design or product to determine if it meets designated criteria.

Compare and contrast technological design and scientific investigation.

Science and Society

Explain how science can influence decisions at community, state, national, and international levels.

Unit Lesson

Objectives

Explain how science affects social, political, economic, cultural, and environmental factors and vice versa.

Describe the consequences of using technology.

Test

Plants and Animals

Overview of Plants

Examine the characteristics common to all plants.

Identify the things a plant needs to survive on land.

Compare the characteristics of nonvascular and vascular plants.

Lab: Flower Dissection

Dissect and describe the parts of a flower.

Relate the parts of a flower to their roles in reproduction.

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.

Animal Behavior

Differentiate between learned and inherited behaviors.

Relate responses in organisms to internal stimuli.

Determine ways in which organisms respond to external stimuli.

Distinguish among the various patterns of behavior exhibited by animals.

Lab: Earthworm Behavior

Observe and measure the physical characteristics of an earthworm.

Unit Lesson

Objectives

Diversity of Life

Examine how an earthworm responds to different external stimuli.

Compare and contrast the physical characteristics of different plants.

Compare and contrast the physical characteristics of different animals.

Identify why the life cycles of different organisms vary.

Unit Test

Ecology

Classification of Living Things

Characterize the domains of living organisms.

List the characteristics used to classify organisms into each kingdom.

Distinguish major animal and plant phyla.

Identify the characteristics that differentiate one species from another.

Characteristics of Life

Identify the characteristics that are common to all living things.

Identify what all living things need to survive.

Cellular Respiration

Explain the steps in the process of cellular respiration.

Identify the products and reactants of cellular respiration.

Seedless Reproduction

Examine the life cycle of a moss and a fern.

Explain why spores are important to seedless plants.

Identify some special structures used by ferns for reproduction.

Unit	Lesson	Objectives
	Seedless Plants	<p>Compare and contrast the characteristics of nonvascular plants and seedless vascular plants.</p> <p>Identify examples of nonvascular plants and seedless vascular plants based on their characteristics.</p> <p>Examine the importance of seedless plants.</p>
	Seed Reproduction	<p>Examine the life cycles of typical gymnosperms and angiosperms.</p> <p>Discuss methods of seed dispersal in seed plants.</p> <p>Describe the structure and function of the flower.</p>
	Seed Plants	<p>Identify the characteristics of seed plants.</p> <p>Explain the structures and functions of roots, stems, and leaves.</p> <p>Describe the main characteristics and importance of gymnosperms and angiosperms.</p> <p>Compare similarities and differences between monocots and dicots.</p>
	Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	