

Options FRMS Science 6B-OR		Scope and Sequence
Unit	Lesson	Objectives
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	
		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	

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		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.
	Lab: Thermal Energy Transfer	
		Investigate how different materials transfer thermal energy.
		Determine how mass affects the amount of thermal energy transferred.
		Observe and compare the specific heat of water with the specific heat of other substances.
	Conduction	
		Explain how molecular movement transfers thermal energy by conduction.
		Distinguish between insulators and conductors.
		Identify situations in which conduction occurs.
	Convection	
		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	
Energy in Earth's Atmosphere		

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	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.
	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.

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	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.
		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 and Human Impacts on the Earth		
	Factors That Affect Climate	
		Explain what causes seasons.
		Explain how various factors affect weather and climate.
	Lab: Absorption and Radiation by Land and Water	
		Examine how the angle of sunlight affects heat absorption in the different climate regions.

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		Compare and contrast the absorption of heat by land and water surfaces.
	Earth's Climate History	
		Explain how scientists study ancient climates.
		Identify factors that can cause long-term climate change.
	Climate Change	
		Identify events that can cause short-term and global climate change.
		Explain how human, biologic, and geologic activities can influence climate.
	Human Impact on Resources	
		Identify the negative impacts that human activity has had on Earth's resources.
		Identify the positive impacts that human activity has had on Earth's resources.
		Compare the costs and benefits of conservation policies.
	Lab: Effects of Human Activity on Freshwater Resources	
		Identify sources of freshwater pollution.
		Model the effect of pollutants on the quality of freshwater resources.
		Predict the effect of human activity on the health of a freshwater ecosystem.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	