OPTIONS FRMS Science 8 A	Scope and Sequence
Unit Lesson	**Objectives**
History of the Earth	
The Fossil Record	
	Identify how a fossil forms.
	Explain how scientists determine the age of a fossil.
	Examine how the fossil record indicates a long history of changing life-forms.
Relative Dating	
	Describe the law of superposition.
	Explain how geologists determine the relative age of rocks.
	Explain how fossils are used to date rocks.
Absolute Dating	
	Explain what happens during radioactive decay.
	Explain how geologists determine the absolute age of rocks.
Lab: Relative and Absolute Dating	
	Apply the principles of rock dating to construct a geologic history of a region.
	Model radioactive decay.
Geologic Time	
	Explain why the geologic time scale is used to show Earth's history.
	Distinguish the units of the geologic time scale.
	Explain how Earth has evolved over geologic time.
Unit Test	
Structure of the Universe	
The Expanding Universe	

OPTIONS FRMS Science 8 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Describe the big bang theory.
		Explain how the solar system formed.
		Describe what astronomers predict about the future of the universe.
	Stars	
		Identify the physical properties of stars.
		Explain how stars are classified.
		Explain how a star forms.
		Explain what happens as a star runs out of fuel.
	Star Systems and Galaxies	
		Describe star systems.
		Distinguish the major types of galaxies.
	The Solar System	
		Compare the geocentric and heliocentric models of the solar system.
		Explain how Copernicus, Galileo, and Kepler contributed to the acceptance of the heliocentric model.
		Identify objects that make up the solar system.
	Planets	
		Identify characteristics shared by the inner planets.
		Identify characteristics shared by the outer planets.
		Identify each planet in the solar system.
	Gravity and Motion	
		Identify factors that influence the force of gravity between objects.
		Explain how Earth and the moon stay in orbit.

OPTIONS FRMS Science 8 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	The Earth-Sun-Moon System	
		Explain how Earth moves in space.
		Explain what causes the phases of the moon.
		Describe solar and lunar eclipses.
		Explain what causes tides.
	Other Objects in the Solar System	
		Distinguish between comets, asteroids, and meteoroids.
		Explain the difference between meteoroids, meteors, and meteorites.
		Describe the characteristics of dwarf planets.
		Science Practice: Examine how life may be affected when cosmic objects impact Earth.
	Unit Test	
Natural Selection and Evolution		
	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.
	The Theory of Evolution	
		Analyze the historical development of the theory of evolution.

OPTIONS FRMS Science 8 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Examine the evidence Darwin used to support his theory of evolution.
		Summarize Darwin's theory of evolution.
	Natural Selection	
		Examine how natural selection leads to evolution.
		Identify the conditions required for natural selection.
		Identify ways in which genetic variation and environmental factors contribute to natural selection.
		Describe factors that contribute to the extinction of a species.
	Lab: Natural Selection	
		Examine natural selection within a population.
		Analyze data to determine phenotype changes through generations.
	Evidence for Evolution	
		Determine how comparative anatomy supports the theory of evolution.
		Compare patterns of embryological development in different organisms.
	Evolutionary Relationships	
		Analyze the relationships among organisms based on a variety of shared characteristics.
		Interpret evolutionary relationships among organisms on a cladogram.
	Advances in Genetics	
		Compare the processes of selective breeding, cloning, and genetic engineering.
		Describe the impact of genetic technologies on society and the environment.
		Examine the use of gene therapy to treat disease.
	Unit Test	
Energy and Its Uses		

OPTIONS FRMS Science 8 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	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.
	Energy on Earth	
		Distinguish between renewable and nonrenewable resources.
		Identify renewable and nonrenewable resources.
		Identify advantages and disadvantages of various energy sources.
	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.

OPTIONS FRMS Science 8 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Compare the costs and benefits of conservation policies.
	Unit Test	
Engineering		
	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.
		Explain how science affects social, political, economic, cultural, and environmental factors and vice versa.
		Describe the consequences of using technology.
	Technological Design	
		Describe the process of technological design.
		Identify the limitations of a design problem.
		Explain the relationship between science and technology.
	Science and Society	
		Explain how science can influence decisions at community, state, national, and international levels.
		Explain how science affects social, political, economic, cultural, and environmental factors and vice versa.
		Describe the consequences of using technology.
	Test	
Cumulative Exam		
	Cumulative Exam Review	

OPTIONS FRMS Science 8 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Cumulative Exam	