TX-Earth Systems	Scope and Sequence
Unit Lesson	**Objectives**
Nature of Science	
Scientific Knowledge	
	Distinguish between science and pseudoscience.
	Identify characteristics of scientists.
	Explain how scientific knowledge progresses.
	Describe the limitations of science.
Scientific Inquiry	
	Summarize the process of scientific inquiry.
	Identify questions that can be answered through scientific investigation.
	Distinguish the three types of scientific investigations, including the benefits and limitations of each.
	Distinguish between variables and controls in a scientific investigation.
Hypotheses, Theories, and Laws	
	Distinguish among hypotheses, theories, and laws.
	Identify examples of scientific theories and laws.
	Explain how and why theories may change.
	Explain how hypotheses lead to new experimentation.
Tools and Technology	
	Identify the use of technology in science.
	Describe the relationship between science and technology.
	Identify the function, advantages, and limitations of models in science.
Experimental Design Principles	

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Identify reasons why scientific investigations should be replicable.
		Differentiate between replication and repetition.
		Distinguish between accuracy and precision.
	Analyzing Data	
		Examine charts and graphs to predict trends in data.
		Use data to draw inferences and formulate conclusions.
	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.
	Unit Test	
Earth's Structure and Plate Tectonics		
	Earth's Interior	
		Explain how geologists learn about Earth’s interior.
		Compare and contrast the three main layers of Earth.
	Continental Drift	
		Explain continental drift.

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Describe evidence that supports continental drift.
	Plate Tectonics	
		Explain the theory of plate tectonics.
		Identify the major tectonic plates.
		Distinguish the three types of plate boundaries.
		Relate plate tectonics to the formation of landforms.
	Characteristics of the Seafloor	
		Describe the process of seafloor spreading.
		Describe evidence that supports seafloor spreading.
		Explain what occurs at deep-ocean trenches.
	Unit Test	
Changing the Earth's Surface		
	Forces in Earth's Crust	
		Explain how stress in the crust affects Earth’s surface.
		Explain why faults form in particular areas.
		Identify land features that result from plate movement.
	Earthquakes	
		Describe the causes of an earthquake.
		Explain how the energy of an earthquake travels.
		Describe methods used to measure earthquakes.
		Explain how geologists locate the epicenter of an earthquake.
	Volcanoes	

Unit	Lesson	Objectives
		Identify the reasons why Earth’s volcanic regions are located in certain areas.
		Explain what happens when a volcano erupts.
		Distinguish the two types of volcanic eruption.
		Describe the three stages of volcanic activity.
		Explain how volcanoes create various landforms.
	Lab: Plate Boundaries and Movement	
		Differentiate between the major types of plate boundaries.
		Describe the role of mantle convection in plate movement.
		Examine how plate movements cause changes in Earth's surface.
		Compare and contrast the plate movements that cause earthquakes and volcanic eruptions.
	Unit Test	
Weathering, Erosion, and Deposition		
	Cycles of Matter	
		Examine how carbon cycles through an ecosystem.
		Analyze the importance of the nitrogen cycle.
		Identify the processes involved in the water cycle.
	Weathering and Soil	
		Distinguish between mechanical and chemical weathering.
		Identify factors that affect the rate of weathering.
		Describe the characteristics of soil.
		Explain how soil is formed.
		Classify different types of soil.

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Erosion and Deposition	
		Describe erosion and deposition.
		Differentiate types of mass movement.
	Water and Wind Erosion	
		Identify features that are formed by water erosion and deposition.
		Identify causes of groundwater erosion.
		Explain how glaciers and waves cause erosion and deposition.
		Describe the effects of wind erosion and deposition.
	Lab: Modeling Water Erosion	
		Identify factors that affect erosion and deposition by rivers.
		Model stream processes and observe stream behavior.
	Unit Test	
Earth's Geosphere		
	Landforms	
		Identify what the topography of an area includes.
		Identify the three main types of landforms.
	Models of Earth	
		Explain how maps and globes represent Earth’s surface.
		Describe the reference lines that are used to locate points on Earth.
		Identify the three major map projections.
		Explain how computers are used to map Earth’s surface.
	Topographic Maps	

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Explain how elevation, relief, and slope are shown on topographic maps.
		Interpret topographic maps.
		Describe uses of topographic maps.
	Unit Test	
Earth's History		
	Fossils	
		Explain how fossils form.
		Differentiate types of fossils.
		Explain how fossils show Earth’s changes over time.
	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.

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Explain how Earth has evolved over geologic time.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	
Earth's Waters		
	Surface Water	
		Identify sources of fresh water.
		Identify the components of a river system.
		Identify the characteristics of ponds and lakes.
		Distinguish the three types of wetlands.
	Lab: Environmental Changes in a Watershed	
		Examine how environmental changes affect the health of a watershed.
		Predict the effect of human activity on the resources found in a watershed.
	Groundwater	
		Explain how water moves underground.
		Differentiate major groundwater zones, including the saturated and unsaturated zones and the water table.
		Explain how groundwater is obtained.
	Ocean Water	
		Locate Earth’s five oceans.
		Describe the composition of ocean water.
		Distinguish the three main sections of the ocean’s floor.

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Distinguish the three ocean zones.
	Ocean Circulation	
		Identify causes of waves, currents, and tides.
		Describe tides as a source of energy.
		Describe changes that affect ocean circulation.
	Unit Test	
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.
	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.
	Unit Test	
Earth's Climate and Climate History		

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
	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.
	Factors That Affect Climate	
		Explain what causes seasons.
		Explain how various factors affect weather and climate.
	Climate Regions	
		Identify factors used to define climates.
		Distinguish the six main climate regions.
	Lab: Absorption and Radiation by Land and Water	
		Examine how the angle of sunlight affects heat absorption in the different climate regions.
		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.
	Unit Test	
Earth's Resources		
	Energy on Earth	

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Distinguish between renewable and nonrenewable resources.
		Identify renewable and nonrenewable resources.
		Identify advantages and disadvantages of various energy sources.
	Land Resources	
		Describe land as a natural resource.
		Explain how land resources are managed.
	Air Resources	
		Describe the atmosphere as a natural resource.
		Describe the importance of clean air.
	Water Resources	
		Describe the importance of water.
		Explain how Earth's water is distributed and used.
		Explain how water resources are managed.
	Unit Test	
Human Impact on the Earth		
	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.
	Economics of Resources	
		Explain the importance of the economics of resources.
		Examine the economics of Earth's energy, water, mineral, and rock resources from discovery to disposal.

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
	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	
Beyond Earth		
	The Expanding Universe	
		Describe the big bang theory.
		Explain how the solar system formed.
		Describe what astronomers predict about the future of the universe.
	Planets	
		Identify characteristics shared by the inner planets.
		Identify characteristics shared by the outer planets.
		Identify each planet in the solar system.
	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	
Cumulative Exam		
	Cumulative Exam Review	

TX-Earth Systems		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Cumulative Exam	