Form 6 Earth Science: Year at a Glance; 2016 -2017

FALL SEMESTER		
FIRST QUARTER		
Week	**Big Ideas**	**Topics**
1 ½ week	Scientists use repeatable observations and testable ideas to understand and explain our planet.	Introduction to Science: Procedures Scientific Practices: Observation, Inference and Prediction
2 ½ week	Scientists use repeatable observations and testable ideas to understand and explain our planet.	Scientific Practices: Observation, Inference and Prediction Scientific Practices: Measurement, Types of Investigations
3	Scientists use repeatable observations and testable ideas to understand and explain our planet.	Scientific Practices: Experimental Design Guided design
4	Scientists use repeatable observations and testable ideas to understand and explain our planet.	Scientific Practices: Experimental Design Individual design

5	The Universe is a system and set of interacting sub-systems, including our solar system.
	Our Earth is a system of interacting rock, water, air, and life within the solar system.
		Systems
		• Earth Systems: Interactions And Relationships
		  • Biosphere & Anthrosphere
		  • Geosphere
		  • Hydrosphere & Cryosphere
		  • Atmosphere
		  • Exosphere

The Exosphere		
6	The universe is a system that had a beginning at a specific point in time. Systems of patterns, cycles and movement govern the universe.	The Universe • Origin – Big Bang • Characteristics
7	The universe consists of sub-systems.	Galaxies & Stars • Types of galaxies • Classification of galaxies • Star Life Cycle
8	The universe consists of sub-systems.	Stars & the Sun • Life Cycle • HR Diagram
9	The universe consists of sub-systems. Systems beyond the planet Earth interact with and impact Earth Systems.	Earth-Moon-Sun system • Day length - rotation • Seasons - revolution

SECOND QUARTER		
Week	**Big Ideas**	**Topics**

1	Systems beyond the planet Earth interact with and impact Earth Systems.	Earth-Moon-Sun system
		• Seasons
		  • Tilt
		  • Direct & indirect energy

2	Systems beyond the planet Earth interact with and impact Earth Systems.	Earth-Moon-Sun system
		• Lunar Cycles
		  • Moon phases
		  • Tides

3	Systems beyond the planet Earth interact with and impact Earth Systems.	Earth-Moon-Sun system • Lunar cycles • Eclipses
4	Properties of matter affect Earth's systems.	• Density: a property of all parts of the Earth • Convection: caused by changes in density
The Atmosphere		
5	The Earth's atmosphere continuously interacts with other components of the Earth System.	The atmosphere • Layers • Characteristics (density) • UV radiation
The Hydrosphere		
6	Water connects all Earth systems. Change in the Hydrosphere is cyclic and is controlled by physical properties and processes. The cycling of water in and out of the atmosphere is a significant aspect of the weather patterns on Earth.	Water cycle • Phase changes • Water movement
7	Water connects all Earth systems. Change in the Hydrosphere is cyclic and is controlled by physical properties and processes. The cycling of water in and out of the atmosphere is a significant aspect of the weather patterns on Earth.	Surface & Groundwater • Aquifers & groundwater ○ Edward's Aquifer • Caves & Sinkholes
8	**Review and Exams**	

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SPRING SEMESTER		
THIRD QUARTER		
Week	**Big Ideas**	**Topics**
The Hydrosphere		

1	Water connects all Earth systems.
	Humans depend on the Earth for resources; only a small part of the water on Earth is accessible and usable.
		Oceans
		• Characteristics of ocean water
		  ○ Temperature
		  ○ Density

2	Water connects all Earth systems. Water changes the geosphere.	Oceans • Surface currents & waves • Gyres • Coriolis Effect
3	Water connects all Earth systems. Global movement and changes in water result in changes in all Earth systems.	Oceans • Thermohaline circulation
Interactions of the Atmosphere & Hydrosphere		
4	Water connects all Earth systems. Global movement and changes in water result in changes in all Earth systems. The ocean is a major influence on weather and climate.	Weather • Factors (temperature, precipitation, relative humidity, wind) • Air pressure • Coriolis Effect
5	Water connects all Earth systems. Global movement and changes in water result in changes in all Earth systems. The ocean is a major influence on weather and climate.	Weather • Air masses & fronts • Weather forecasting
6	Climate is regulated by complex interactions among components of the Earth system. The ocean is a major influence on weather and climate. Global movement and changes in water and wind result in climate.	Climate • El Nino / La Nina • Climate & Climate Change
The Geosphere		
7	Like the hydrosphere, changes in the Geosphere are cyclic and are controlled by physical properties and processes.	• Layers of the Earth ○ Properties and characteristics • Geologic time
8	The Geosphere is in a constant state of constructive and destructive change.	• Geologic time • Continental drift
9	The Geosphere is in a constant state of constructive and destructive change	Plate tectonics • Plate boundaries • Subduction • Seafloor spreading

10	The Geosphere is in a constant state of constructive and destructive change.	Mountain building and earthquakes • Folding • Faulting

FOURTH QUARTER		
Week	**Big Ideas**	**Topics**
1	The Geosphere is in a constant state of constructive and destructive change.	Earthquakes • Waves •
2	The Geosphere is in a constant state of constructive and destructive change.	Earthquakes • Waves •
3	The Geosphere is in a constant state of constructive and destructive change.	Volcanoes • Formation
4	The Geosphere is in a constant state of constructive and destructive change.	Volcanoes • Types
5	The Geosphere is in a constant state of constructive and destructive change.	Weathering • Types of weathering • Agents of weathering
6	The Geosphere is in a constant state of constructive and destructive change.	Erosion & Deposition • Agents of erosion • Results of deposition
7	The Geosphere is in a constant state of constructive and destructive change.	• Rock Cycle
Events & Interactions in Earth Systems		
8	The Earth is a system and set of interacting sub-systems. It is a system of interacting rock, water, air, and life.	Interactions Infographic Project
Engineering & Design		
9	Like pure science, engineering and technology involve both knowledge and a set of practices. Both are applications of science used to study and interact with Earth Systems.	Engineering Design
10 ½ week	Like pure science, engineering and technology involve both knowledge and a set of practices. Both are applications of science used to study and interact with Earth Systems.	Engineering Design & exam review
	Exams	