Science Scope and Sequence

	Quarter: 1	Quarter2	Quarter 3	Quarter 4
Strand	**Life Science (LS)**	**Earth Space Science (ESS)**	**Earth Space Science (ESS)**	**Physical Science (PS)**
Topic	**Species and Reproduction** This topic focuses on continuation of the species.	**Physical Earth** This topic focuses on the physical features of Earth and how they formed. This includes the interior of Earth, the rock record, plate tectonics and landforms.	**Physical Earth** This topic focuses on the physical features of Earth and how they formed. This includes the interior of Earth, the rock record, plate tectonics and landforms.	**Forces and Motion** This topic focuses on forces and motion within, on and around the Earth and within the universe.
Content Statement	**8.LS.3: The characteristics of an organism are a result of inherited traits received from parent(s).** Expression of all traits is determined by genes and environmental factors to varying degrees. Many genes influence more than one trait, and many traits are influenced by more than one gene. During reproduction, genetic information (DNA) is transmitted between parent and offspring. In asexual reproduction, the lone parent contributes DNA to the offspring. In sexual reproduction, both parents contribute DNA to the offspring.	**8. ESS.1: The composition and properties of Earth's interior are identified by the behavior of seismic waves.** The refraction and reflection of seismic waves as they move through one type of material to another is used to differentiate the layers of Earth's interior. Earth has a core, a mantle, and a crust. Impacts during planetary formation generated heat. These impacts converted gravitational potential energy to heat. Earth's core is also able to generate its own thermal energy because of decaying atoms. This continuously releases thermal energy. Thermal energy	**8.ESS.3: A combination of constructive and destructive geologic processes formed Earth's surface.** Earth's surface is formed from a variety of different geologic processes, including but not limited to plate tectonics. **8.ESS.4: Evidence of the dynamic changes of Earth's surface through time is found in the geologic record.** Earth is approximately 4.6 billion years old. Earth history is based on observations of the geologic record and the understanding that processes	**8.PS.1: Objects can experience a force due to an external field such as magnetic, electrostatic, or gravitational fields.** Magnetic, electrical and gravitational forces can act at a distance. **8.PS.2: Forces can act to change the motion of objects.** The motion of an object is always measured with respect to a reference point. Forces can be added. The new force on an object is the sum of all of the forces acting on the object.

		generated from Earth's core drives convection currents in the asthenosphere. **8.ESS.2: Earth's lithosphere consists of major and minor tectonic plates that move relative to each other.** Historical data and observations such as fossil distribution, paleomagnetism, continental drift and sea-floor spreading contributed to the theory of plate tectonics. The rigid tectonic plates move with the molten rock and magma beneath them in the upper mantle. Convection currents in the asthenosphere cause movements of the lithospheric plates. The energy that forms convection currents comes from deep within the Earth. There are three main types of plate boundaries: divergent, convergent and transform. Each type of boundary results in specific motion and causes events (such as earthquakes or volcanic activity) or features (such as mountains or	observed at present day are similar to those that occurred in the past (uniformitarianism). There are different methods to determine relative and absolute age of some rock layers in the geologic record. Within a sequence of undisturbed sedimentary rocks, the oldest rocks are at the bottom (superposition). The geologic record can help identify past environmental and climate conditions.	If there is a nonzero net force acting on an object, its speed and/or direction will change. Kinetic friction and drag are forces that act in a direction opposite the relative motion of objects.

		trenches) that are indicative of the type of boundary.		
Resources	**McGraw Hill Inspire Science ODE Model Curriculum**	**McGraw Hill Inspire Science ODE Model Curriculum**	**McGraw Hill Inspire Science ODE Model Curriculum**	**McGraw Hill Inspire Science ODE Model Curriculum**
Notes	***LS.1 Population genetics and the ability to use statistical mathematics to predict changes in a gene pool are reserved for high school Biology.**	***LS.3 The focus should be the link between DNA and traits without being explicit about the mechanisms involved.** ***LS.3The ways in which bacteria reproduce is beyond the scope of this content statement.** ***LS.3The molecular structure of DNA is not appropriate at this grade level.**	***ESS.1** Radioactive decay is not the focus; this will be discussed in Physical Science and Chemistry. ***ESS.1** At this grade level, analyzing seismograms (e.g., amplitude and lag time) and reading a travel time curve are not the focus. At this grade the properties of seismic waves should be addressed.	
Vocabulary				

Quarter(s) 1-4
SCIENCE INQUIRY AND APPLICATIONS
During the years of grades 5 through 8, all students must have developed the ability to:
SIA 1:Identify questions that can be answered through scientific investigations;
SIA 2:Design and conduct a scientific investigation; Use appropriate mathematics, tools and techniques to gather data and information
SIA 3:Analyze and interpret data; Develop descriptions, models, explanations and predictions;
SIA 4:Think critically and logically to connect evidence and explanations;
SIA 5:Recognize and analyze alternative explanations and predictions;

SIA 6: Communicate scientific procedures and explanations.