CRM 5 Dynamic Earth	**Pacing** • **33 days** • **Jan. 7-Feb.22** • **Week 18-24**

DESIRED RESULTS

Making Meaning

Concepts in the study of Earth science help explain many changes we observe around us. Investigations in the physical sciences help lay a foundation for students to understand the size, age, construction, and behavior of Earth. In addition, studies in life science are partially rooted in Earth science since Earth is the only planet known to support life. Earth science concepts connect with all the other disciplines and connect the concepts in the other strands of science together. These concepts build a foundation for the study of geology, geological history, geophysics, geochemistry, geobiology, climate change, and environmental sciences. Students build an understanding of the Earth and our place in the solar system and the universe.

The following make meaning valuable for learners and are investigated in this unit:

- Earth is a unique water planet that supports life.
- Earth's surface is constantly changing due to the forces of moving wind, water, and ice.
- Forces below the surface of the Earth cause dramatic, quick changes to Earth's surface.
- Earth produces natural resources that meet the needs of humans and other organisms.
- Earth recycles its materials.
- Humans have an impact on Earth.

Transfer: Students understand that models of the Earth's surface and processes are simplified representations of real objects and processes, and that models serve as a means to communicate ideas and knowledge about how these Earth processes work.

Enduring Understandings:	**Essential Questions:**
• Rock and soil bear evidence of the minerals, temperatures, and forces that created them. • Earth's surface is constantly changing due to forces. • Characteristics of resources make them useful and worth conserving.	• How do rocks and soil tell about Earth's past? • How do forces shape Earth's land? • What makes a natural resource useful?

Essential Vocabulary		**Supporting Vocabulary Link**
• basin/cuenca • canyon / cañón • clay/ arcilla, barro • collide/ chocar • core/ núcleo • crack/ grieta • crust / corteza • debris / escombros • decaying plant and animal material/ descomposición de restos de plantas y animals • decompose / descomposición • deposition/ sedimentación • sand dune/ duna de arena	• landslide/ derrumbe de tierra • lava/ lava • loam/ marga • magma/ magma • mantle/ manto • mountain/ montaña • mud/ fango, lodo • particles / partículas • peak /cumbre • plains/ llanuras • plateau/ altiplano, meseta • rock cycle/ ciclo de las • plates/ placas • sand/ arena • sea level/ nivel del mar • sediments / sedimentos • sedimentary rock /roca	• Elementary School Supporting Vocabulary

• earthquake/ terremoto • elevation / elevación • erosion / erosión • erupt / entra en erupción • fault/ falla • folds/ pliegues • friction/ fricción • glacier/ glaciar • gravity/ gravedad • hills/ colinas • humus / humus • igneous rock /roca ígnea • metamorphic rock /roca metamórfica • landforms / accidentes geográficos	sedimentaria • slope/ pendiente • steep/ escarpado • valley/valle • weathering /degradación • conservation / conservación • man-made resources / recursos por el hombre • natural resources / recursos naturales • non-renewable resources/ recursos no renovables • renewable resources / recursos renovables	

Student Prerequisite Knowledge

Students should know:

- rocks come in many colors, textures, sizes, and have different masses.
- rocks can be measured.
- rocks are formed from one or more minerals.
- rocks are formed in different ways.
- why water is important to life.
- where our water on Earth comes from.
- freshwater sources: rivers, ponds, lakes, streams, aquifers, glaciers.
- salt-water sources: oceans, (and a few lakes and seas.)
- natural resources are found in nature.
- man uses resources to make things for everyday use.
- uses for natural resources in our world
- examples of products made of/with water, soil, and rocks
- resources that are reusable and recyclable.
- conservation is necessary to make sure we have enough of these resources.

Resources: AISD Module Kit, Model Lesson Portfolio, STEMscopes, eBooks: Envisions Science Leveled Readers, Scott Foresman Text, Science Notebook Resources, BrainPop Jr., Discovery Education

ELPS: Mandated by Texas Administrative Code (19 TAC §74.4), click on the link for English Language Proficiency Standards (ELPS) to support English Language Learners.

TEKS Knowledge & Skills	**Acquisition**	
STAAR: RC = Reporting Category; DC = Dual Coded Skills; **Readiness Standard**; ***Supporting Standard*** ~~Concepts~~ are addressed in another unit.	**Students Will Know**	**Students Will Be Able To**
3.7: Earth and space. The student knows that Earth consists of natural resources and its surface is constantly changing. The student is expected to:		
3.7A: explore and record how soils are formed by weathering of rock and the decomposition of plant and animal remains.	• Soils are partially formed by the weathering, erosion, and sedimentation of rock material. • Soils are composed of weathered rock, plant and animal remains, and many living organisms. • Soils are large ecosystems that support many living organisms.	• Explore how soil is formed. • Record and illustrate how soil forms. • Explore and record the different components of soil.

3.7B: investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides	• The interior core of Earth is molten. • Heat flow and movement of materials within the Earth cause earthquakes and volcanic eruptions. • Earthquakes and volcanic eruptions create mountains and ocean basins. • Landslides cause rapid changes to Earth's surface.	• Investigate rapid changes on Earth's surface. • Investigate volcanic eruptions, earthquakes, and landslides through hands-on investigations. • Identify the changes make to Earth's surface by rapid changes.
3.7C: identify and compare different landforms, including mountains, hills, valleys, and plains.	• There are a variety of different landforms on Earth's surface. • Earth's surface is constantly being changed and shaped by water, wind, and ice. • Some changes are quick, and some changes take many years to see the change.	• Identify landforms and compare formation, drainage, and physical features of landforms including mountains, hills, valleys, and plains.
3.7D: explore the characteristics of natural resources that make them useful in products and materials such as clothing and furniture and how resources may be conserved.	• Natural resources are found in nature. • Man uses resources to make things for everyday use. • Many resources are reusable and recyclable. • Conservation is necessary to make sure we have enough of these resources.	• Explore characteristics of natural resources and describe how these characteristics make them useful in products and materials. • Explore how resources may be conserved, recycled, reused, and repurposed.

The study of science is taught through the lens of Scientific Processes (TEKS 3.1-3.4); therefore, these TEKS should be taught in conjunction with content throughout the year. Suggestions for TEKS to embed in each unit are provided in the Yearly Itinerary; however, the TEKS that can be addressed within a unit depends greatly on the learning activities in which students are engaged. Therefore, teachers must be deliberate in their choice of learning activities to ensure that all Scientific Processes TEKS are appropriately embedded within the course. In 3rd grade, districts are encouraged to facilitate laboratory and field investigations for at least 60% of instructional time.

ASSESSMENT EVIDENCE

Student Work Products/Assessment Evidence

Performance Tasks	**Other Evidence (i.e. unit tests, open ended exams, quiz, essay, student work samples, observations, etc.)**
Students investigate the following with hands-on labs: • soil formation/types of sand • volcanoes • landslides • earthquakes • landform formation labs • characteristics of natural resources • conservation of resources • science fair project	**Short Cycle Assessment** • *SCA Testing Window: Feb. 4-8, 2013* *Tested TEKS: 3.8D, 3.7B, 3.7C* • *SCA Testing Window: Feb. 25-Mar. 1, 2013* *Tested TEKS: 3.7A, 3.7D* **Additional Suggestions for Assessment** • Student Interactive Notebooks and Lab Notes • Teacher observations and questioning • Earth Structures diagram • Student probe • Weathering booklet • Types of Soil Foldable

	• Rock Cycle graphic organizer • Cause/effect statements about how earthquakes and volcanoes change Earth • Volcano and Landslide Lab Sheet • Landform Booklet or graphic organizer • Comparing landforms chart • Students conclusions about how mountains form • Concept map-how hills form • Resources graphic organizer
LESSON PLANNING TOOLS	
In the course of lesson planning, it is the expectation that teachers will include whole child considerations when planning such as differentiation, special education, English language learning, dual language, gifted and talented, social emotional learning, physical activity, and wellness.	
Science Fair 5 Days *Use questions and student interest from the beginning and throughout the year to guide students through a descriptive investigation. If you have made an Inquiry Board to showcase student questions and ideas, validate student thinking with reading and talking about how as a scientist, each of their questions might be answered using scientific investigations. Remember that scientists answer questions in many ways, not just experimental investigations: building models, observations, observations and data collection over time, research and collaboration with other scientists.*	
Model Lesson- *Earth Changes Rapidly* • Earth's Layers • Volcanoes • Earthquakes • Landslides Suggested Pacing: (9 days) TEKS: 3.7B	
Model Lesson- *Comparing Landforms* • Landforms • Mountains • Valleys • Hills • Plains • Comparing Landforms Suggested Pacing: (5 days) TEKS: 3.7C	
Model Lesson- *Rocks & Soil* • Rocks & Minerals • Weathering: From Rock to Soil • What is Soil Made of? Estimated Pacing: (5 days) TEKS: 3.7A	
Model Lesson- *Earth Materials: Natural and Man-Made* • Natural Resources • Reduce/Reuse/Recycle • Earth Science Review and Assessment Suggested Pacing: (9 days) TEKS: 3.7D	