Lehighton Area School District
Curriculum Framework

Course Title:	Earth Science
Content Area:	Science
Grade Level(s):	6th Grade
Course Overview:	Learn how land, water, air, and living things interact on Earth how Earth is a continually changing planet and how the material that makes up our planet is constantly being cycled. Investigate weather and climate on Earth and how the planet's climate is changing. Explore the history of Earth and how human activity impacts the availability and distribution of natural resources. Learn about the objects that make up the solar system and how Earth, the moon, and the sun interact.
PA Core Standards:	PA STEELS Standards K-12
Key Course Text and Materials:	SAVAAS Earth Science, Teacher Created Materials, Labs and Supplies
Key Assessments/Projects:	Diagnostic: CDT Formative: Labs and activities, simulations and model construction, bell ringers, exit tickets, CER and class discussions Summative: Projects, Unit Test

Big Idea/Unit: Introduction to Earth's Systems

Pacing: 18 Days

Standards	Objective/Skill	Vocabulary	Additional Resources	Assessment/Project
3.3.6-8.E 3.3.6-8.F	Analyze and interpret data to describe evidence that Earth has four major subsystems, or spheres, that cycle matter and energy and shape Earth's surface: atmosphere, geosphere, hydrosphere, and biosphere. Construct explanations using reasoning to predict similar patterns by recognizing that the Earth system ~involves flows of matter and energy through different components ~has two main sources of energy: heat from the sun and heat from Earth's interior Develop and use models to demonstrate how a system returns information about itself, and that information results in change. Analyze and interpret data to describe evidence that there are a variety of landforms on Earth because Earth's surface is different from place to place. Construct explanations using reasoning to predict similar patterns by recognizing that ~the geosphere, atmosphere, and biosphere interact with each other to affect Earth. ~the topography of the land is constantly being created and destroyed by competing constructive and destructive forces. Develop and use models to demonstrate how computers create topographic and other maps from aerial photography and satellite imagery to model Earth's landforms.	atmosphere geosphere hydrosphere cryosphere biosphere energy system feedback topography landform mountain coastline dune river delta surveying modeling	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in " Fire and Earth' s Spheres" Teacher Generated Questions Lesson Quiz Generation Genius Brain Pop
3.3.6-8.E 3.3.6-8.F	Analyze and interpret data to describe evidence that there are a variety of landforms on Earth because Earth's surface is different from place to place. Construct explanations using reasoning to predict similar patterns by recognizing that the geosphere, atmosphere, and biosphere interact with each other to affect Earth. the topography of the land is constantly being created and destroyed by competing constructive and destructive forces. Develop and use models to demonstrate how computers create topographic and other maps from aerial photography and satellite imagery to model Earth's landforms.	topography landform mountain coastline dune river delta surveying modeling	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in- "Impact on the Hydrosphere" Teacher Generated Questions Lesson Quiz Topic Assessment BrainPop Generation Genius
3.3.6-8.H	Analyze and interpret data to describe evidence that ~the majority of Earth's fresh water is frozen into glaciers and thickened ice masses. ~the remaining fresh water is found underground, in lakes and rivers, and the atmosphere. ~oceans, rivers, lakes, and ponds are all part of the surface water in the hydrosphere. Develop and use models to demonstrate how the process of evaporation, condensation, transpiration, and precipitation continually cycle water from Earth' s surface to the atmosphere and back again.	topography landform mountain coastline dune river delta surveying modeling	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in- "Impact on the Hydrosphere" Teacher Generated Questions Lesson Quiz Topic Assessment BrainPop Generation Genius

Big Idea/Unit: Weather in the Atmosphere

Pacing: 30 Days

Standards	Objective/Skill	Vocabulary	Additional Resources	Assessment/Project

3.3.6-8.E 3.3.6-8.F	Indentify and synthesize data to construct and explaination of ~the structure and layers of Earth's atmosphere ~the composistion and characteristics of each layer in the Eath's atmosphere Will use models and analyze information to ~predict the stability and change caused by unequal heating of the Eath's atmosphere by the sun	atmosphere air pressure altitude wind stable	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in " Fire and Earth' s Spheres" Teacher Generated Questions Lesson Quiz Generation Genius Brain Pop
3.3.6-8.E 3.3.6-8.F	Analyze and interpret data to descibe evidence that ~water vapor enters the atmpsphere through a number of processes ~water is continously evaoprating and condensing in in the atmosphere and this process forms clouds ~precipitation is a vital part of the water cycle Students will develop models to demonstrate	atmosphere air pressure altitude wind stable	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in " Fire and Earth' s Spheres" Teacher Generated Questions Lesson Quiz Generation Genius Brain Pop

Big Idea/Unit: Minerals and Rocks in the Geosphere

Pacing: 25 Days

Standards	Objective/Skill	Vocabulary	Additional Resources	Assessment/Project
3.3.6-8.E 3.3.6-8.F	Examine evidence to determine how geologists learn what Earth's interior is like. Identify and describe evidence that Earth is made up of a lithosphere, a mantle, and an outer and inner core. Explain how convection occurs in Earth's mantle.	seismic wave crust mantle outer core inner core evidence elements	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Teacher generated questions Quest Check-In "The Deep Drill" Generation Genius Brain Pop
3.3.6-8.E 3.3.6-8.F	Identify characteristics of minerals and explore their properties. Identify the processes that result in the formation of minerals.	mineral crystal crystallization organic	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson quiz Teacher generated questions Quest Check-In Make Your Own Stalagmites and Stalactites Generation Genius Brain Pop
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Identify the three major types of rocks. Explain how the formation of rocks is the result of the flow of energy and cycling of matter within Earth. Observe rocks and classify them according to the three major types. Explain how each of the three major types of rocks forms.	igneous rock sedimentary rock sediment metamorphic rock apply	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Quest Check-In: Rocky Business Generation Genius: Rocks and Minerals BrainPop
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Develop and use models to demonstrate: how processes that occur on Earth's surface and in the crust and mantle slowly change rocks from one kind to another. that material is not lost or gained. Analyze cause-and-effect relationships in order to predict how: energy from deep inside Earth drives the forces that build and change the rocks of Earth's crust. patterns of repeating events in the rock cycle constantly change rocks from one type into another type. the flow of energy within Earth cause the plate movements that help drive the rock cycle.	rock cycle process source	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Quest Check-In "The Rock Cyclers" Generation Genius Brain Pop Topic 3 Assessment

Big Idea/Unit: Plate Tectonics

Pacing: 18 Days

Standards	Objective/Skill	Vocabulary	Additional Resources	Assessment/Project
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Identify and describe evidence that: supports that all the continents were once fused together in a supercontinent called Pangaea. supports how land masses drifted apart over time into the continents known today. continental coastlines appear to fit together and mountain ranges on different continents line up. similar plant and animal fossils are found on continents separated by oceans. Earth's continents experienced different climates that the ones they have today. Analyze and interpret data to describe evidence that: Earth's plates are in slow, constant motion due to forces within the mantle. convection drives plate motion.	mid-ocean ridge sea-floor spreading subduction ocean trench hypothesis	Scholastic Study Jams Quizizz Quizlet Kahoot Generation Genius	Lesson Quiz Quest Check-in: Lab: Patterns in the Cascade Range Brain Pop
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Develop and use models to demonstrate that: some features and events on Earth's surface coincide with plate boundaries. the movement of Earth's plates has greatly changed the locations of the continents and the size and shape of ocean basins. Analyze relationships to predict: the different features and events that occur at different types of plate boundaries. the results of plate movement at different scales. Use and develop models to explain how plate movement and stress produce new landforms.	divergent boundaries convergent boundaries transform boundaries theory	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Quest Check-in: Mount Rainier's Threat Brain Pop Generation Genius: Plate Tectonics
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Analyze and interpret data as evidence that energy released from interacting plates results in an earthquake to compare the magnitudes of earthquakes. to relate the energy of an earthquake to the formation of a tsunami. Use and develop models to demonstrate that: the characteristics of earthquakes and tsunamis can be predicted. the prediction of natural phenomena can be used to mitigate risk.	stress tension compression shearing fault earthquake magnitude tsunami	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Quest Check-in: Monitoring a Volcano Brain Pop

Big Idea/Unit: Earth's Surface Systems

Pacing: 26 Days

Standards	Objective/Skill	Vocabulary	Additional Resources	Assessment/Project
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Describe and give examples of ways in which Earth's surface is torn down by mechanical and chemical weathering. Describe and give examples of ways in which Earth's surface is built up by the formation of soil. Describe and give examples of ways in which Earth's surface is torn down by processes of erosion.	uniformitarianism erosion mechanical weathering chemical weathering soil humus principle component	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Teacher Generated Questions Quest Check-in - Breaking it Down Generation Genius BrainPop

3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Describe and give examples of processes that change Earth's surface, such as erosion and deposition. Describe how mass movement of rock and soil on Earth's surface changes that surface. Describe how wind contributes to erosion and deposition and causes changes to Earth's surface.	sediment deposition mass movement deflation sand dune loess similar significant	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Teacher Generated Questions Quest Check-in - Changing Landscapes Quest Check-in Hands on Lab - Ingenious Island Part I Generation Genius BrainPop
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Describe and give examples of ways in which Earth's surface is built up and torn down by water erosion. Describe and give examples of landforms that form from water erosion and deposition. Describe and give examples of ways in which groundwater affects and changes Earth's surface.	runoff stream tributary flood plain delta alluvial fan groundwater develop suggest	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Teacher Generated Questions Quest Check-in Hands on Lab - Ingenious Island Part II Generation Genius BrainPop
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G	Describe and give examples of ways in which Earth's surface is changed by glaciers. Describe and give examples of ways in which Earth's surface is changed by wave erosion.	glacier continental glacier ice age valley glacier plucking till longshore drift interaction impact	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Teacher Generated Questions Quest Check-in - Breaking Waves Generation Genius BrainPop Topic 5 Review and Assessment

Big Idea/Unit: Distribution of Natural Resources
Pacing: 17 Days

Standards	Objective/Skill	Vocabulary	Additional Resources	Assessment/Project
3.3.6-8.K 3.3.6-8.M 3.3.6-8.N	Identify and describe the difference between renewable and nonrenewable resources. examples of use of nonrenewable energy resources in daily life. Construct an explanation for the distribution patterns of nonrenewable resources throughout the globe. how past and current geoscience processes affect the distribution of natural resources. Use an evidence-based argument to show that increases in human population and resource consumption impact Earth's systems.	natural resource nonrenewable resource fossil fuels nuclear fission	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in "Surviving on Fossil Fuels" Teacher generated questions Lesson Quiz BrainPop Generation Genius
3.3.6-8.M 3.3.6-8.N	Use models and images to describe how solar panels, hydroelectric plants, and geothermal plants generate energy. demonstrate how a wind turbine generates electricity. Use quantitative relationships to describe the projected growth in the use of wind power over time. Construct an explanation for the circumstances that favor the use of each type of renewable resource	renewable resource cost	Scholastic Study Jams Quizizz Quizlet Kahoot	Teacher Generated questions Lesson Quiz Quest Check-In "Renewable Energy" BrainPop Generation Genius

				Lesson Quiz
	Cite textual evidence to identify mineral resources.	ore	Scholastic Study Jams	Quest Check-In: Rocky Business
3.3.6-8.K	Use visuals and models to determine factors that affect the distribution of minerals on Earth.	crystallize distribution	Quizizz Quizlet Kahoot	Generation Genius: Rocks and Minerals BrainPop
				Quest Check-in - “Surviving on Water”
	Describe and give examples of			
3.3.6-8.E	the types of water resources available on Earth.	desalination	Scholastic Study Jams	Lesson Quiz
3.3.6-8.F	ways that geological processes affect the distribution of water resources.	component	Quizizz	Teacher Generated questions
3.3.6-8.G	Analyze and interpret data to determine how people rely on and use water resources.	obtain	Quizlet Kahoot	Topic Assessment BrainPop Generation Genius

Big Idea/Unit:	Human Impacts on the Environment			
Pacing:	23 Days			
Standards	**Objective/Skill**	**Vocabulary**	**Additional Resources**	**Assessment/Project**
	Analyze data to determine how human population has changed since 1750. that the current rate of population growth is exponential.	birth rate death rate		
3.3.6-8.M		exponential growth		Lesson Quiz
3.3.6-8.N	Evaluate textual evidence to describe a chain of reasoning that includes the	pollution		Teacher Generated questions
3.4.6-8.G	ideas that	overpopulation		Quest Check In-More Trash
3.4.6-8.H	increased human population leads to greater consumption of natural resources.	conservation	Scholastic Study Jams	Less Space
3.4.6-8.I	scarcity of natural resources limits human activity.	sustainable use	Quizizz	BrainPop
	strategies can help address the effects of population growth on the consumption of natural resources.	estimate constraints	Quizlet Kahoot	Generation Genius
	Analyze data to determine how human population has changed since 1750 that the current rate of population growth is exponential	birth rate death rate exponential growth		Lesson Quiz
3.3.6-8.M		pollution		Teacher Generated Questions
3.3.6-8.N	Describe a chain of reasoning that includes the ideas that	overpopulation		Quest Check-in - “Trash vs.
3.4.6-8.G	increased human population leads to greater consumption of natural resources	conservation	Scholastic Study Jams	Water”
3.4.6-8.H	scarcity of natural resources limits human activity	sustainable use	Quizizz	Generation Genius
	strategies can help address the effects of population growth on the consumption of natural resources	estimate constraints	Quizlet Kahoot	BrainPop
	Identify and describe evidence that natural resources include anything we use that occurs naturally in the environment, such as organisms, water, sunlight,	natural resource renewable resource		Lesson Quiz
3.3.6-8.M	minerals and soil.	nonrenewable resource		Teacher Generated Questions
3.3.6-8.N		deforestation		Quest Check-in - “Life of a
3.4.6-8.G	Explain how some resources are not easily replaced.	erosion	Scholastic Study Jams	Landfill”
3.4.6-8.H		desertification	Quizizz	Generation Genius
	Analyze cause-effect relationships to describe how use of resources, without conservation, can lead to negative impacts on the ecosystem.	sustainable resource	Quizlet Kahoot	BrainPop

	Identify and describe evidence that 97.5% of the water on Earth is undrinkable because it contains salt. more than half of freshwater is frozen solid in the polar ice sheets, leaving only about 0.5 percent of all the water on the planet as drinkable.			Lesson Quiz Teacher Generated Questions
3.3.6-8.M 3.3.6-8.N 3.4.6-8.G 3.4.6-8.H	Cite evidence to support that water pollution is caused by farming wastes, household pollutants, industrial waste, and trash, which can end up in the water supply. Describe efforts to reduce water pollution by limiting the amount of pesticides and fertilizers they use on their home gardens and lawns. reduce their use of plastics and recycling plastics they do use.	sewage sediment thermal pollution distributed	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in - Reducing Waste Generation Genius BrainPop Topic 7 Review and Assessment

Big Idea/Unit:	History of Earth			
Pacing:	20 Days			
Standards	**Objective/Skill**	**Vocabulary**	**Additional Resources**	**Assessment/Project**
	Identify current methods that geologists use to describe the ages of rocks.	relative age absolute age		
	Identify current methods that geologists use to determine the relative ages of rocks.	law of superposition fossil unconformity		Lesson Quiz Quest Check-in - Clues in the Rock Layers
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G 3.3.6-8.D	Explain and give examples of ways that geologists determine the absolute ages of rocks provide physical evidence to show that Earth has changed over time due to natural processes.	radioactive decay radioactive dating relative infer	Scholastic Study Jams Quizizz Quizlet Kahoot	Quest Check-in - Fossils around the World Brain Pop
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G 3.3.6-8.D	Identify the purpose of the geologic time scale. Identify and analyze evidence that helps define and divide geologic time. Earth evolved due to natural processes.	geological time scale era period organize refine	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Quest Check-in - A Matter of Time Generation Genius: Rock Layers (Geologic Time) Brain Pop
3.3.6-8.E 3.3.6-8.F 3.3.6-8.G 3.3.6-8.D	Identify and analyze data to support that Earth's geologic history can be organized by major events. Explain how Earth changed in the Paleozoic era Mesozoic era Cenozoic era	invertebrate vertebrate amphibian reptile mass extinction mammal	Scholastic Study Jams Quizizz Quizlet Kahoot	Lesson Quiz Quest Check-in - Time to Choose the Dig Site Brain Pop