

**PACE ACADEMY
EARTH SCIENCE
CURRICULUM GUIDE
SY 2020-2021**

Most Essential Learning Competencies	Science Lessons
FIRST QUARTER	
Describe the historical development of theories that explain the origin of the Universe	Lesson 1.1 Theories on the Origin of the Universe
Compare the different hypotheses explaining the origin of the Solar System	Lesson 1.2 The Origin of the Solar System
Describe the characteristics of Earth that are necessary to support life	Lesson 1.3 Life on Earth
Explain that the Earth consists of four subsystems, across whose boundaries matter and energy flow	Lesson 1.4 Earth's Subsystems
Identify common rock-forming minerals using their physical and chemical properties	Lesson 1.5 Minerals
Classify rocks into igneous, sedimentary, and metamorphic	Lesson 1.6 Rocks and the Rock Cycle Lesson 1.7 Classification of Rocks
Describe how ore minerals are found, mined, and processed for human use	Lesson 1.8 Ore and Minerals
Describe how fossil fuels are formed	Lesson 1.9 Fossil Fuels
Explain how heat from inside the Earth (geothermal) and from flowing water (hydroelectric) is tapped as a source of energy for human use	Lesson 1.10 Geothermal Energy Lesson 1. 11 Hydroelectric Energy
Identify the various water resources on Earth	Lesson 1.12 Water on Earth Lesson 1.13 Earth's Waters
Explain how different activities affect the quality and availability of water for human use	Lesson 1.14 Water as a Resource
Identify human activities, such as farming, construction of structures, and waste disposal, that affect the quality and quantity of soil	Lesson 1.15 Soil and Soil Quality
Describe how people generate different types of waste (solid, liquid, and gaseous) as they make use of various materials and resources in everyday life	Lesson 1.16 Human Activities, Waste and Waste Management
Explain how different types of waste affect people's health and the environment	
SECOND QUARTER	
Most Essential Learning Competencies	Science Lessons
Describe how rocks undergo weathering	Lesson 2.1 Weathering

explain how the products of weathering are carried away by erosion and deposited elsewhere	Lesson 2.2 Erosion and Transport Lesson 2.3 Deposition
Explain why the Earth's interior is hot	Lesson 2.4 Magma and Volcanism
Describe what happens after magma is formed	
Describe how rocks behave under different types of stress such as compression, pulling apart, and shearing	Lesson 2.5 Deformation
Describe the changes in mineral components and texture of rocks due to changes in pressure and temperature (metamorphism)	Lesson 2.6 Metamorphism
Describe the continental drift theory	Lesson 2.7 Continental Drift Theory
Discuss evidence that support continental drift	
Describe the structure and evolution of ocean basins	Lesson 2.8 Seafloor Spreading
Explain how the movement of plates leads to the formation of folds, faults, trenches, volcanoes, rift valleys, and mountain ranges	Lesson 2.9 Plate Tectonics
Describe how layers of rocks (stratified rocks) are formed	Lesson 2.10 Stratigraphy and Relative Ages
Describe the different methods (relative and absolute dating) of determining the age of stratified rocks	Lesson 2.11 Absolute Dating
Explain how relative and absolute dating were used to determine the subdivisions of geologic time	
Describe how index fossils (also known as guide fossils) are used to define and identify subdivisions of the geologic time scale	Lesson 2.12 Fossils and the Geologic Time Scale
Describe the history of the Earth through geologic time	Lesson 2.13 Earth's History

Reference:

Olivar, J. T., Rodolfo, R., & Cabria, H. (2018). *Exploring Life Through Science - Earth Science*. Quezon City: The Phoenix Publishing House, Inc.

Time Allotment: Two (2) synchronous sessions (40 minutes per session); Five (5) asynchronous sessions (40 minutes per session)

Promotion/Retention:

- Assessments will be categorized as the following with the corresponding weight:
 - Short Quizzes (20%)
 - Written Outputs (35%)
 - Product and Performance Tasks (45%)
- Short Quizzes.** These include summative assessments after every lesson, group of related lessons, or chapter.
- Written Outputs.** These include concept maps, data recording and analyses, laboratory reports and documentations, reaction/reflection papers, article reviews, and surveys.

- **Product and Performance Tasks.** These include portfolios, investigatory projects, models and diagrams construction, prototype building, research papers, debates, designing and implementation of action plans, designing various models, doing scientific investigations, issue-awareness campaigns, laboratory activity, multimedia presentations, simulation, skills demonstration, and verification experiments.