

Year 8 – Earth – Structure and Universe

Name of unit	
Expected Outcomes • Students will describe the structure of the Earth, including the crust, mantle, core, and tectonic plates. • Students will understand processes such as volcanic eruptions and earthquakes. • Students will explain how the rock cycle operates and describe different types of rock. • Students will describe the structure of the Solar System and explain the relative motion of celestial bodies. • Students will understand day, night, seasons, and phases of the Moon based on the Earth’s motion.	
Developmental Focus Opportunities • Model-based learning: Using physical and visual models to represent Earth’s layers and space systems. • Scientific reasoning: Explaining large-scale processes (e.g., orbits, tectonics) using evidence. • Cross-disciplinary connection: Linking Earth science with astronomy. • Observation and inquiry: Using diagrams, simulations, or simple demonstrations to explore celestial movement.	
Key Learning Points	Powerful Knowledge
• The Earth is composed of different layers with specific characteristics. • The rock cycle explains how rocks are formed, changed, and recycled. • The Solar System consists of planets orbiting the Sun, and their motion causes day, night, and seasons. • The Moon’s orbit causes phases and eclipses, and gravitational interactions shape orbits.	• Understanding our planet’s dynamic systems and their impact on life. • Recognising Earth’s place in the universe and how motion explains observable patterns. • Applying scientific knowledge to natural phenomena like volcanoes, moon phases, and planetary motion. • Building a foundation for later physics topics on gravity, forces, and space science.
Subject-Specific Vocabulary	Reading Opportunities
• Crust • Mantle • Core • Tectonic plate	• Articles about planetary exploration or natural disasters. • Excerpts from science books on space, geology, or Earth science. • NASA or ESA educational materials for student reading.

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- Rock cycle
- Igneous
- Sedimentary
- Metamorphic
- Orbit
- Solar System
- Rotation
- Revolution

Possible Misconceptions

- Believing the Sun moves around the Earth.
- Confusing rotation (day/night) with orbit (year).
- Thinking all rocks come from volcanoes.
- Assuming earthquakes are caused by weather.

Cross-Curricular Links

- **Geography:** Plate tectonics, natural hazards, Earth structure.
- **History:** Space race and exploration milestones.
- **Art:** Creating models or diagrams of the Earth and Solar System.