

Lithosphere Study Guide

EEn.2.1.1 Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

1. Explain the rock cycle in enough detail to relate the cycling of materials - formation and destruction of the three major rock types to the forces responsible: physical and chemical weathering, heat and pressure, deposition, foliation and bedding. The forms of energy that drive the rock cycle include heat and mechanical (gravitational potential) energy.
2. Explain how various mechanisms (mantle convection, ridge push, gravity pull) drive movement of the lithospheric plates.
3. Infer the relationship between the type of plate boundary and the locations of various features such as ocean trenches, mountain ranges and mid-ocean ridges. (Relate to the development of the theory of plate tectonics and geologic time.)
4. Compare magma and lava. Locate volcanoes and relate back to plate boundaries. Explain volcanic effects on the lithosphere and relate back to plate boundaries (convergent, divergent, transform) including lahar (mud) flows and ash in the atmosphere.
5. Describe the anatomy of an earthquake. Locate earthquakes – epicenter and focal point – and relate to different types of plate boundaries. Explain how the release of energy of various types of earthquakes relates to magnitude, and P and S waves.

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