# **Unit 6: Rocks**

# **Objectives:**

# Identify and distinguish between three major rock types

# Describe the rock cycle including the forces that power Earth’s rock cycle

# Identify and classify igneous rock types based on composition and texture

# Identify and classify sedimentary rocks

# Describe three major processes involved in the formation of sedimentary rocks

# Identify and classify metamorphic rock types based on composition and foliation patterns

# Distinguish between contact metamorphism from regional metamorphism

1. ***The Rock Cycle***

* A rock is any solid mass of mineral or mineral-like matter that occurs naturally as part of Earth.
* The three major types of rocks are**\_\_\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_,** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

1. ***Igneous Rocks***
2. Rocks that form when magma hardens beneath Earth’s surface are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. When lava hardens, the rocks that form are called\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. Two characteristics used to classify igneous rocks.
5. Texture = size, shape, and the arrangement of\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. Composition = proportions of light and dark\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. Granitic composition occurs when igneous rocks contain mostly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. Basaltic composition occurs when rocks contain many\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. Andesitic composition occurs in rocks with a combination of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. Ultramafic rocks are composed almost entirely of­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. ***Sedimentary Rocks***
12. Weathering – anything that breaks the rocks into smaller pieces or sediments.

This can happen by the forces of like\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Deposition – wind, running water, and gravity cause \_\_\_\_\_\_\_\_\_\_to settle out of air or water.
2. Erosion – combination of \_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_of sediments.
3. Lithification - changing of sediments into rock.
4. \_\_\_\_\_\_\_\_\_\_\_\_- squeeze or compact, sediments.
5. \_\_\_\_\_\_\_\_\_\_\_\_- when dissolved minerals deposit into the tiny spaces among the sediments. These minerals act as glue or cement to bind the sediments together.
6. Classification of Sedimentary Rocks
   1. Clastic Sedimentary Rocks
      * Conglomerate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      * Breccia \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      * Sandstone \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Chemical and Biochemical Rocks
7. ***Metamorphic Rocks***
   1. Metamorphism refers to the changes in mineral composition and texture of a rock subjected to high temperature and pressure within Earth.
   2. Two Types of metamorphosis
8. Contact metamorphism –\_\_\_\_\_\_\_\_\_\_\_\_\_moves into rock – minor changes in rocks.
9. Regional metamorphism – large-scale \_\_\_\_\_\_\_\_\_\_\_\_\_\_and high-grade \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* Usually results in intense changes such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  1. The agents of metamorphism are \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Hydrothermal solutions occur when hot, water-based solutions escape from magma.
  1. The texture of metamorphic rocks can be \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_.
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_metamorphic rocks have a layered or banded appearance.
  + \_\_\_\_\_\_\_\_\_\_\_\_\_metamorphic rocks do not have a banded texture and usually contain only one mineral.