Name: _____ Period: _____

LESSON

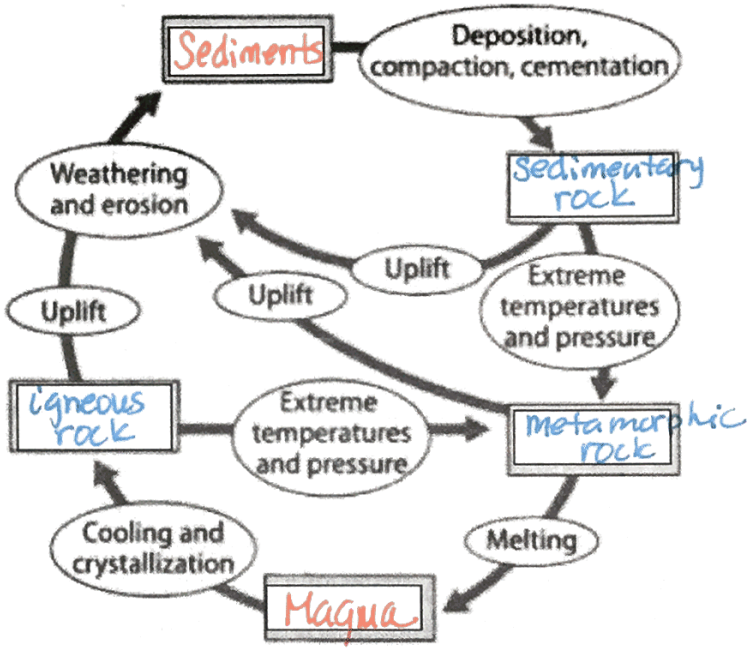
8.1 Rocks and the Rock Cycle

Organize

1. Organize information about rocks.

Rocks	
Definition:	a natural, solid mixture of minerals or grains
Grains identified according to:	size, shape, chemical composition
Classified according to:	texture + composition
Particles made of:	mineral crystals, broken minerals, rock fragments
Can also contain:	remains of organisms, volcanic glass

Fill in the Diagram on the right. Located on Page 308 ➡



Understand

2. Underline what important observations scientists use to classify rocks.

Texture

Geologists also use two important observations to classify rocks: texture and composition. *The grain size and the way grains fit together in a rock are called* **texture.** When a geologist classifies a rock by its texture, he or she looks at the size of minerals or grains in the rock, the arrangement of these individual grains, and the overall feel of the rock.

Recognize

3. Underline where igneous and sedimenatry rocks are commonly found.

Sedimentary Rocks

When rocks are exposed on Earth's surface, they can break down and be transported to new environments. Forces such as wind, running water, ice, and even gravity cause rocks on Earth's surface to break down. **Sediment** *is rock material that forms where rocks are broken down into smaller pieces or dissolved in water as rocks erode.* These materials, which include rock fragments, mineral crystals, or the remains of certain plants and animals, are the building blocks of sedimentary rocks.

Sedimentary rocks form where sediment is deposited. Sedimentary environments include rivers and streams, deserts, and valleys like the one shown in **Figure 4.** Even the loose sediment in the picture at the beginning of this lesson will someday turn into rock. Sedimentary rocks can be found in mountain valleys, along river banks, on the beach, or even in your backyard.

Igneous Rocks

You might remember that when **magma,** *molten or liquid rock underground,* cools, mineral crystals form. *Molten rock that erupts on Earth's surface is called* **lava.** When magma or lava cools and crystallizes, it creates igneous rock. As mineral crystals grow, they connect much like pieces of a jigsaw puzzle. These crystals become the grains in an igneous rock.

The texture and composition of these grains help geologists to classify the type of igneous rock and the environment where this rock may have formed. Igneous rocks form in a variety of environments including subduction zones, mid-ocean ridges, and hot spots where volcanoes are common.

Connect

4. If rocks are changing all the time, then why is it difficult to see them change?

The changes in rock happen very slowly

Interpret

5. Use the diagram in **Figure 6** to identify some processes that can cause a rock to change.

Sedimentary rocks: weathering, erosion, deposition, compaction, cementation

igneous rock: magma/lava cooling → crystalizing

metaphoric rock: Extreme pressure → heat

Rocks melting

Summarize it!

In the graphic organizer below, identify each major type of rock. Below each rock describe the process of how it forms. Below that, give 2-3 specific examples of rocks that belong in each category.
Igneous rock examples are on pages 315-317. Sedimentary rock examples are on pages 325-327.
Metamorphic rock examples are on page 337.