The Rock Cycle

A learn-along activity sheet to accompany the Gillespie Museum's ROCK CYCLE video/resources

The Rock Cycle is a geological concept that illustrates how the three main types of rock—sedimentary, metamorphic, & igneous—are related, by describing the conditions required to transform one type into another.

Use the word bank below, and the rock cycle diagram from page-2, to fill in the blanks in the following section on the **three rock types** and the **rock cycle**.

Sedimentary Rocks

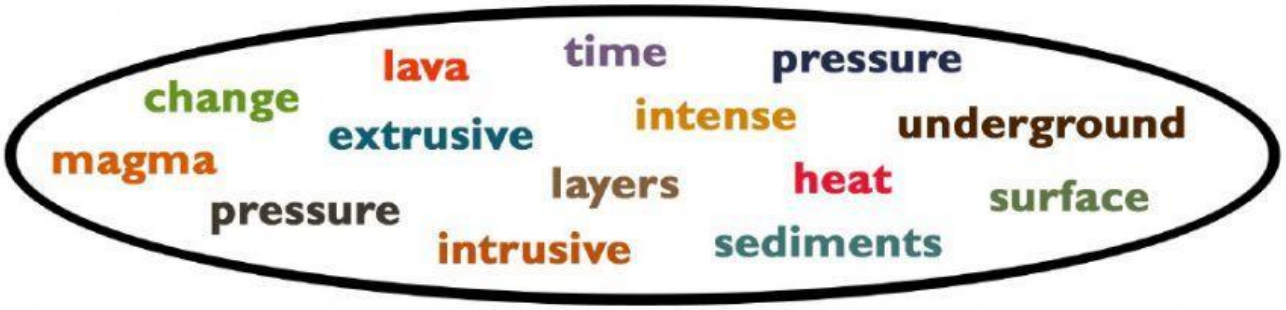
When rocks and minerals are worn and broken down into small pieces by water, wind, or ice, the resulting particles are called _____. The movement of these eroded particles to a new location is called **deposition**, which often results in distinct _____ of sediments building up in a particular area. Sedimentary rocks form near the _____ of the earth. It can take a lot of _____, but eventually, if sediments become compacted by _____ from the weight of water or overtopping earth, they can solidify into rocks like limestone, sandstone, and shale.

Metamorphic Rocks

When a rock becomes buried deep _____ by natural geological processes, conditions can arise that will _____ the rock's chemistry, and turn it into a completely different kind of rock. Over much time, if enough _____ and _____ build up around the old rock, it will eventually **transform** into a new, metamorphic rock, like marble, quartzite, or slate.

Igneous Rocks

When rocks underground become exposed to the _____ heat resulting from geological processes occurring in the earth's interior, they can actually melt. Melted, or molten rock located below the ground level is called _____, but if melted rock becomes exposed on the earth's surface through volcanic activity it is called _____. When **magma** is able to cool and solidify underground, it forms _____ igneous rocks, like granite. When **lava** cools above ground, _____ igneous rocks, like basalt, obsidian, and pumice, are formed.



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IGNEOUS ROCK

- rock becomes buried deep underground.
- ***intense heat*** and pressure melt the rock into *magma*.
- the magma cools and solidifies into **Igneous Rock.**

- erosion of rock into sediments.
- transport, and deposition in layers.
- over ***time, pressure*** compacts and cements the sediments into **Sedimentary Rock.**

(time, pressure)

(intense heat)

- rock buried deep underground.
- heat and pressure build around it.
- over ***time, heat*** and ***pressure*** change (metamorphose) it into **Metamorphic Rock.**

(time, heat, pressure)

(intense heat)

SEDIMENTARY ROCK

(time, pressure)

(time, heat, pressure)

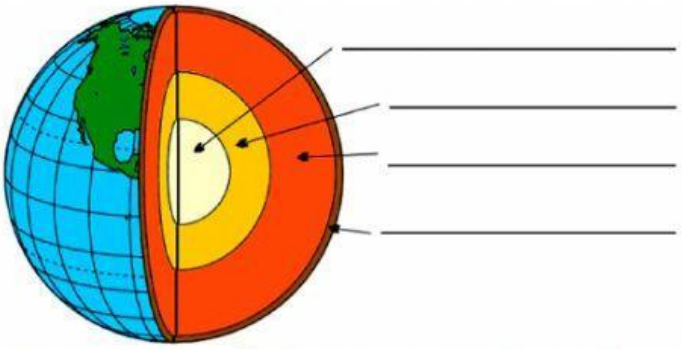
(time, pressure)

METAMORPHIC ROCK

(time, heat, pressure)

Complete this section about the **earth** and the **matter** which makes it up.

Correctly label the diagram with the layers of the earth (**crust, mantle, inner core, outer core**).



All three types of rock form in which earth layer?

_____

Matter is anything that has mass (*similar to weight*) and takes up space (*has volume*).

What are the three states of matter? _____ _____ _____

Matter can change *physically* and *chemically*. Label the two definitions below as **physical** or **chemical** change.

A reversible change, where appearance is altered, but the composition stays the same is _____.

An irreversible change that alters the chemical makeup of a substance is _____.

Is the melting of ice into liquid water a physical or chemical change? _____

What is involved in any change in matter? _____

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