**Guided Notes: Weathering and Erosion (pg 45-50)**

The physical and chemical process that change objects on Earth’s surface over time are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Weathering processes \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

alter rocks and rock surfaces.

Over thousands of years, weathering can \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ into smaller and smaller pieces. These pieces are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Weathering can also change the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ makeup of a rock. Often \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes can make a rock easier to break down.

**MECHANICAL WEATHERING**

When physical processes naturally break rocks into smaller pieces, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is also called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**EXAMPLES OF MECHANICAL WEATHERING**

An example of mechanical weathering is when the intense temperature of a forest fire causes nearby rocks to \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**ICE WEDGING**

Water enters cracks in rocks. Water \_\_\_\_\_\_\_\_\_\_\_\_ as it \_\_\_\_\_\_\_\_\_\_\_\_, and the expansion \_\_\_\_\_\_\_\_\_\_\_\_ the crack. Repeated \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can break apart rocks.

**ABRASION**

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ away of rock by \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_. For example, a strong current in a stream can carry loose fragments of rock downstream. The rock fragments \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ against one another. Eventually, the fragments grind themselves into smaller and smaller pieces. \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_ along ocean or lake shores can also cause abrasion.

**PLANTS**

Plants can cause weathering by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rocks. Imagine a plant growing into a \_\_\_\_\_\_\_\_\_ in a rock. \_\_\_\_\_\_\_\_ absorb minerals from the rock, making it weaker. As the plant grows, its stem and roots not only get longer, they also get wider. The growing plant \_\_\_\_\_\_\_\_\_\_ on the sides of the crack. Over time, the rock \_\_\_\_\_\_\_\_\_\_\_\_\_.

**ANIMALS**

Animals that live in \_\_\_\_\_\_\_\_ create \_\_\_\_\_\_\_\_ in the soil where \_\_\_\_\_\_\_\_\_ enters and causes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Animals \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through loose rock can also break down rocks as they \_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_ are both results of mechanical weathering. The \_\_\_\_\_\_\_\_\_\_\_ the surface area of the particles, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ effect on soil with smaller particles. It also increases the effect of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**CHEMICAL WEATHERING**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes the materials that are a part of rock into new materials.

\_\_\_\_\_\_\_\_\_\_\_\_ is important in chemical weathering because most substances \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in water.

For a rock, the process of dissolving happens when \_\_\_\_\_\_\_\_\_\_\_\_\_ in the rock \_\_\_\_\_\_\_\_ into smaller parts in solution.

**DISSOLVING BY ACIDS**

\_\_\_\_\_\_\_\_ increase the rate of chemical weathering more than rain or water does. Scientists use pH, which is a property of solutions, to learn if a solution is acidic, basic or neutral.

Acid forming chemicals enter the air through natural sources such as \_\_\_\_\_\_\_\_\_\_. Pollutants in the air react with rain to make it more acidic.

**OXIDATION**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ combines the element oxygen with other elements or molecules. The addition of oxyden to a substance produces an \_\_\_\_\_\_\_\_\_\_. Iron \_\_\_\_\_\_\_\_\_ is a common oxide of earth materials. When rocks that contains iron oxidize, a layer of \_\_\_\_\_\_\_\_\_ iron oxide forms on the gray, outside surface.

**WHAT AFFECTS WEATHERING RATES?**

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in which weathering occurs helps determine the rate of weathering. Both types of weathering depend on \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Mechanical weathering occurs fastest in locations that have frequent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes. This type of weathering requires cycles of either \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Chemical weathering is fastest in \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_ places. As a result, weathering often occurs fastest in regions near the \_\_\_\_\_\_\_\_\_\_\_\_\_.

The \_\_\_\_\_\_\_ of rock also affects the rate of weathering. The most easily weathering mineral determines the rate at which the entire rock weathers.