**Your Name _____Period _____ Date _____**

**Chapter 14 Earth Science Word Study *Weathering and Erosion***

**Directions: Study the following words by reading and rereading them each evening so you will be prepared for the word study test each week. You may use one index card to write as many words and definitions on as possible to use for the test. The card must written in ink, be in your handwriting, and have your name, period, and chapter recorded in the top, right corner with no obvious erasures or mark outs. If all the criteria are met, you may use your index card during the test. It will then be stapled to your test.**

1.) **weathering – the natural process by which atmospheric and environmental agents such as wind, rain, and temperature changes, starts to disintegrate, and decomposes rock as well as the chemical reactions that can occur naturally and artificially**
2.) **mechanical weathering – the process by which rocks break down into smaller pieces by physical means such as from ice wedging, abrasion, or organic activities**
3.) **joints – long, curved cracks in the rock**
4.) **exfoliation – when rocks break into curved sheets that peel away from the underlying rock**
5.) **ice wedging – occurs when water seeps into cracks or joints in rocks and then freezes, which causes water to expand about 10 percent, and over time causes the rock to break open**
6.) **abrasion – the breaking and wearing away of rocks through gravity, running water, and wind**
7.) **organic activity – mechanical weathering that occurs as animals dig in the soil and plant roots break soil and eventually rocks up *(organic means nothing artificial or completely natural)***
8.) **chemical weathering – the process by which rocks break down as a result of chemical reactions such as through the processes of oxidation, hydrolysis, carbonation, organic acids, and acid precipitation**
9.) **oxidation – the process by which elements combine with oxygen and commonly occurs in rock that has iron-bearing minerals such as hematite and magnetite/the red color in *Georgia Red Clay* is due to iron oxides which rusts**
10.) **hydrolysis – a change that occurs in the composition of minerals when they react chemically with water/Example: when certain types of feldspars combine with water and form the soft, white mineral kaolin which is used in the paper industry, and to produce medications, skincare products, porcelain, and cosmetics**
11.) **carbonation – the process of changing minerals into a carbonate which is when specific minerals combine with carbonic acid/Examples: Limestone and chalk are both carbonates.**
12.) **organic acids – acids produced naturally by living organisms such as lichens and mosses**
13.) **acid precipitation – precipitation, such as rain, sleet, or snow that contains a high concentration of acids, often because of the pollution of the**

**atmosphere**

14.) **differential weathering – the process by which softer, less weather resistant rocks wear away at a faster rate than harder, more weather resistant rocks do**
15.) **amount of exposure – the amount of time and surface area in which rocks are subjected to weathering agents**
16.) **surface area – the part of the rock that is exposed to air, wind, water, and other agents of weathering/as rocks break down, this increases**
17.) **fractures and joints – natural zones of weakness that often look like cracks in rocks and minerals**
18.) **climate – areas that have alternating periods of hot and cold weather allow for the fastest rates of weathering**
19.) **topography & elevation – the slope and height of land**
20.) **human & animal activities – mining and construction from humans and a buildup of biological materials along with large amounts of animal activity can cause an increase in weathering**
21.) **soil – fine particles of rock fragments that have varying mixtures of minerals, water, gases, and the remains of dead plants and animals**
22.) **soil profile – a cross section of the soil and its bedrock showing the different layers which are called *horizons***
23.) **humus – a dark, organic soil containing the remains of dead plants and animals**
24.) **erosion – the processes of gravity, wind, water, and ice by which soil is moved around**
25.) **sheet erosion – the process by which water moves over a layer of soil and removes the topsoil exposing the subsoil underneath/Examples: when continuous rain washes away the topsoil or wind moves the topsoil during extreme droughts on land that does not have any roots to hold it in place**
26.) **mass movement – the movement of rock fragments and soil down hill because of gravity which may occur fast or slow/Examples: rockfalls, landslides, mudflows, slumps, solifluction, and creep**
27.) **slump - when a large block of soil and rock becomes unstable and moves downhill in one piece often because of saturation and steep inclines**
28.) **solifluction – the slow mass movement process by which water-saturated soil slips over hard or frozen layers in arctic and mountainous climate where subsoil is permanently frozen or permafrost exist**
29.) **creep – the extremely slow downhill movement of weathered rock material which removes more soil than any other process of erosion because it is frequently unnoticed until the topsoil is completely gone**
30.) **landform – Earth's surface physical features which include plains, mountains, and plateaus and are impacted by earthquakes or fast changes and weathering and erosion which can be slow changes**
31.) **land degradation - changes to soil caused by human or natural means resulting in urbanization, overgrazing, deforestation such as clearcutting, and desertification eliminating arable land**