Definition: process that breaks down rocks into smaller pieces called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Two Types of Weathering:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - breaking apart rocks without changing the chemical composition of the rock
* **Frost/Ice Wedging**
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ seeps into cracks in rock
* When water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, it expands
* As ice \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, cracks are widened
* Ice \_\_\_\_\_\_\_\_\_\_\_, finds more cracks, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ again
* **Biological**

 *Plants:*

* Roots grow into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of rocks
* As \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ grow, rocks are pushed apart
* Pushing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cracks

*Animals:*

* Burrowing animals bring fresh \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ particles to surface
* Burrows allow \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to penetrate the surface
* **Temperature**
	+ When rocks heat up, they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (grow)
	+ When rocks cool down, they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (shrink)
	+ Constant heating and cooling causes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to form
	+ Cracks \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ quickly when temperatures change a lot
* **Abrasion**
* Abrasion: scraping or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ away
* Rock fragments are carried along by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, they collide and rub against another rock.
* This \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ off small pieces.
* Continued abrasion \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ edges.
1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_—weathering that changes the chemical composition of a rock.
* **Oxygen**
* Oxygen combines with other substances in a chemical reaction called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* When oxygen combines with iron, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is formed.
* This weakens \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bonds and breaks the rock.
* **Water**
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: Water can weather rock by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ minerals.
* This will leave empty spaces.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: chemical reaction in which water combines with another substance to form a new mineral.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: water can \_\_\_\_\_\_\_\_\_\_\_\_ apart minerals and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with the parts.
* **Carbon Dioxide**
* When water combines with CO2, it forms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Carbonic acid can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ some minerals such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* This can cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* **Acid Rain**
* \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_ react with water and oxygen to create \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Acid rain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ up weathering and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plant and animal life.
* It \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ manmade structures.

**Factors Affecting Weathering:**

* Climate
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_ climates speed up weathering.
* \_\_\_\_\_\_\_\_\_\_\_\_\_ climates favor ice wedging.
* \_\_\_\_\_\_\_\_\_\_\_ climates experience \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ weathering
* Mineral Composition
* Rocks made of minerals that will react with acids, water and oxygen will weather quicker than minerals that are les reactive
* Exposure
* The more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rocks have to air, water, and living things, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ they weather
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a rock \_\_\_\_\_\_\_\_\_\_\_\_\_\_ weathering.
* Rocks with \_\_\_\_\_\_\_\_\_\_\_\_\_ or more exposed surfaces will weather \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Time
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ a rock is exposed to weathering processes, the more it is broken down.
* Weathering is a \_\_\_\_\_\_\_\_\_\_\_ process.
* It can take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of years for a rock to weather.
* Eventually, \_\_\_\_\_\_\_\_ rocks at Earth’s surface will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ broken down by weathering.

**What Weathering Makes:**

* Sediments:
* Sediments are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or­­­ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of rock produced by weathering.
* Sediments are named by their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Soil
* Weathering and plant growth change exposed rock and sediments into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* As soil forms, weathering and plant growth causes recognizable layers called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to form in the soil.

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**The Nature of Soil**

* Formation of **soil** – can take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of years.
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a mixture of weathered rock, decayed organic matter, mineral fragments, water, and air.
	+ Formation is influenced by \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_, types of \_\_\_\_\_\_\_\_\_\_\_\_\_\_, types of \_\_\_\_\_\_\_\_\_\_\_, and length of \_\_\_\_\_\_\_\_\_\_ that rock has been weathering.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of soil – the ingredients that make up soil.
* Clay, silt, and sand are small particles of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Decaying, dark-colored plant and animal material is called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* Small spaces between soil particles may be filled with \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_.
* **Soil Profile** – made up of different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of soil
* **Horizon** A- \_\_\_\_\_\_\_\_\_\_\_ soil layer
* May be covered with organic \_\_\_\_\_\_\_\_\_\_\_\_\_\_ that may turn into humus
* Fertile layer with more \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and less \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and mineral particles than other soil horizons
* Horizon B- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ soil layer
* Contains less \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is lighter in color that A horizon
* Minerals travel from A horizon to B horizon in a process called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* Horizon C - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ soil layer
* Has very little \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ matter and is not strongly affected by leaching
* Contains rock – the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ material of the soil
* Glaciers can deposit soil that did not form from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ beneath it.
* Soil types - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in different places
* Different regions have different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that affect soil development.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rock affects soil formation and type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that grows in a region.
* \_\_\_\_\_\_\_\_\_\_\_\_\_ affects foil development because the longer the weathering has occurred, the less the soil resemble from the parent rock.
* Soil on steep \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ develops poorly.