Weathering= Rocks and sediments break down

Erosion= Smaller pieces are moved to new locations

Three types:

1) Physical (mechanical)

2) Chemical

3) Biological

|  |  |  |
| --- | --- | --- |
| What is physical weathering? | What is chemical weathering? | Why is biological weathering? |
| * NO changes in composition * Size and shape change * Factors:   **Temperature**  Frost Wedging: water freezes and expands, cracking rocks  **Pressure**  Exfoliation: pressure of overlying rocks are removed, underlying rocks can expand | * Mineral composition CHANGES * Chemical Reaction does occur * New minerals form * Agents:   + Water🡪 Hydrolysis   + Oxygen🡪 Oxidation   + Carbon Dioxide🡪 ex: cave   + Acid🡪 ex: acid rain | * Living organism cause changes in rocks or sediment * Ex: tree roots growing around a rock splitting it * Ex: humans displacing or removing rock surfaces |

Factors that affect weathering: Climate; temperature and moisture

Climate for chemical weathering: Is more common/faster in areas of warm temperatures and high rainfall

Example: “Painted Desert” of Arizona/New Mexico

Climate for physical weathering: Physical weathering is more common/faster in area of cool, dry climate

Example: NC mountains

**Formation of Sedimentary Rocks**

Even though igneous rocks are the most common in Earth’s crust, most of Earth’s surface is covered in sediment.

Sediments: Pieces of solid rock material re-deposited on Earth’s surface by forces (wind, water, ice, gravity, precipitation)

Steps:

1. Weathered particles get moved downhill: erosion
2. Get laid down/sink: deposition
3. Deposits become layered: sorting
4. Layers stack up on top of each other: burial
5. These processes add material to sedimentary basins
6. As burial occurs, layers are subjected to greater heat and pressure
7. These conditions cause lithicfication
   * *lithos* = stone
   * Two steps:
     + Compaction: excess water and air are squeezed out
     + Cementation: new minerals form

The primary features of sedimentary rocks are horizontal layers called bedding.

* Graded bedding
  + Bigger on the bottom
* Cross-bedding
  + Slanted layers

**Sedimentary Rock Classification**

Organic sedimentary rocks: From once living things

Chemical sedimentary rocks: Evaporites

Clastic sedimentary rocks: Loose deposits on Earth’s surface (Most Common)