

UNIT: WEATHERING, EROSION, DEPOSITION NOTEPACKET

- A. **Weathering** - the breakdown of rocks and minerals into smaller particles called sediments
1. Weathering represents a rocks response to changing environmental conditions
 2. Weathering will occur whenever a rock is exposed to the atmosphere, hydrosphere, or biosphere - (the rock itself is part of the lithosphere)
- B. There are 2 primary types of weathering:
1. **Physical/Mechanical Weathering** - the breakdown of rocks and minerals into smaller particles sizes without a change in chemical composition - it results in a reduction of particle size, only
 - a. **frost/ice wedging** - water expands when it freezes and splits rocks like a wedge
 - b. **root wedging** - roots grow and expand into crevices, exerting pressure as they do
 - c. **exfoliation** - when the weight of overlying material is removed the rocks outer surface peels off
 - d. **abrasion** - rock particles that are carried along by water, wind or ice bump and rub against one another and wear each other down
 2. **Chemical Weathering** - the breakdown of rocks and minerals into smaller particle sizes by chemical action with a distinct change in the chemical composition of the sediment - results in a change of chemical composition as well as a reduction of particle size - the sediments are different chemically from the unweathered, parent rock
 - a. **oxidation** - elements in rocks and minerals combine with oxygen and break down
 - b. **hydration** - elements in rocks and minerals combine with water and break down - water dissolves many Earth materials
 - c. **carbonation** - carbon dioxide dissolves in water to form carbonic acid
 - d. **other acids** - oxides of sulfur dissolve in water to produce sulfuric acid
oxides of nitrogen dissolve in water to produce nitric acid
 - e. **biosphere** - lichens and mosses secrete acids that dissolve rocks and minerals
- Facts about chemical weathering;
1. it is more severe than physical/mechanical weathering
 2. carbon dioxide, oxides of sulfur and oxides of nitrogen are all added to the