WEATHERING

CHEMICAL Weathering process — **CWP**

PHYSICAL Weathering process — **PWP**

BIOLOGICAL Weathering process — **BWP**

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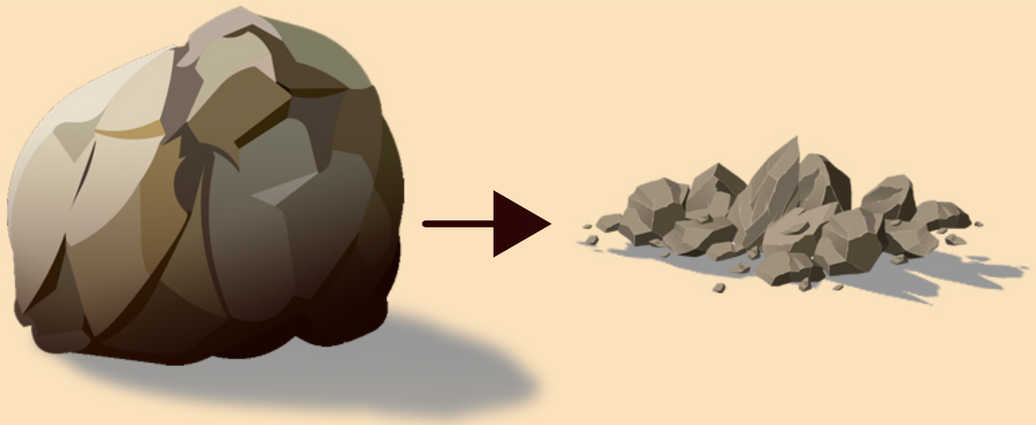
Weathering is the action of elements of weather and climate over earth materials. Weathering process varies across climate and weathering mantle.

CWP

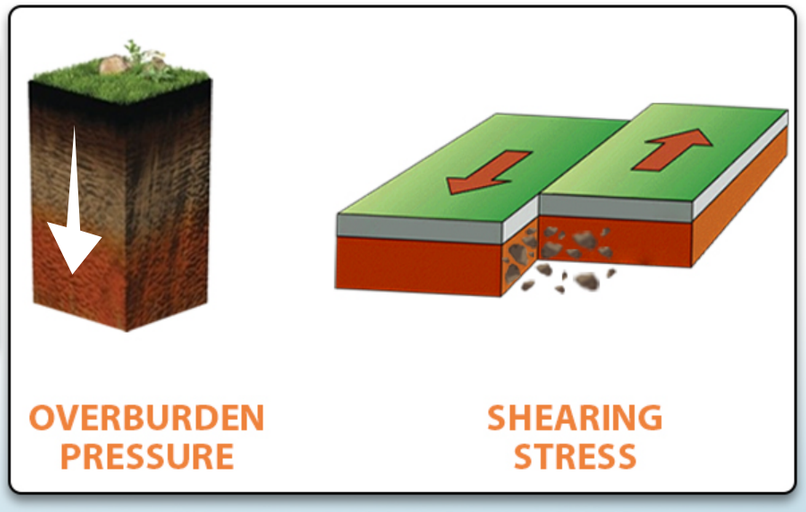
- CARBONATION
- HYDRATION
- OXIDATION
- REDUCTION

\+ WATER, HEAT, AIR



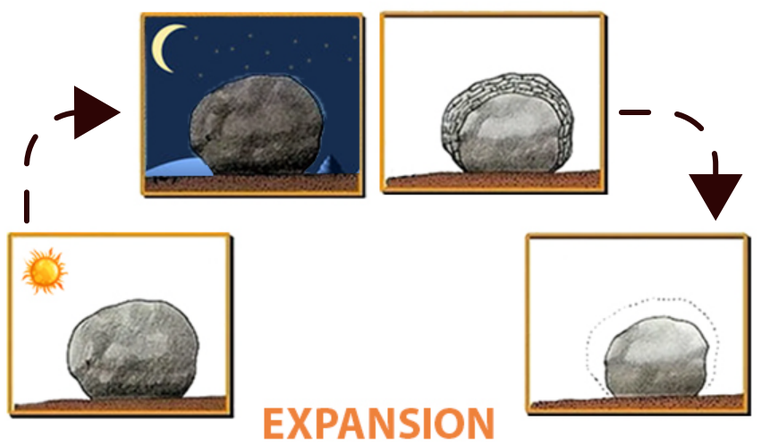
PWP

Gravitational forces such as overburden pressure, load and shearing stress;



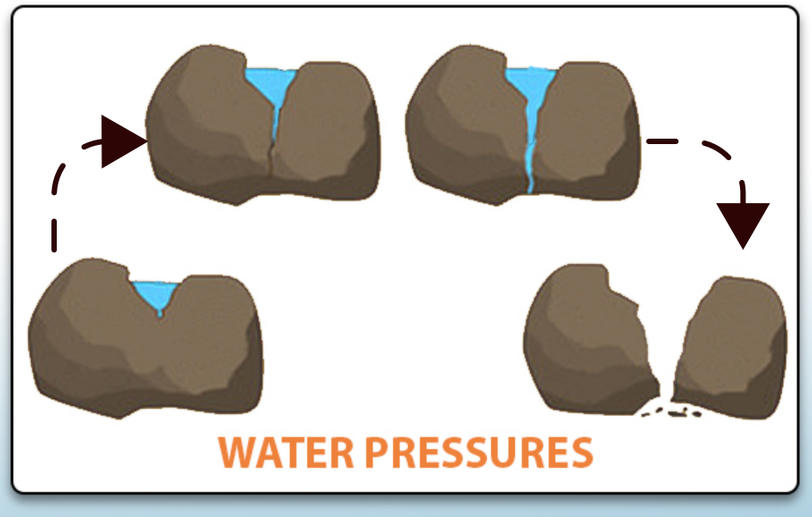
OVERBURDEN PRESSURE — SHEARING STRESS

Expansion forces due to temperature changes, crystal growth or animal activity;



EXPANSION

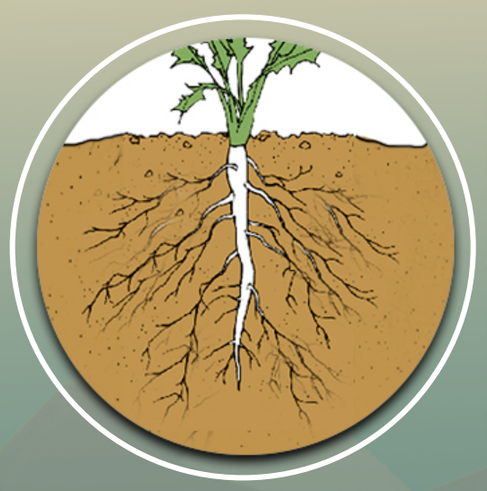
Water pressures controlled by wetting and drying cycles;



WATER PRESSURES

Physical weathering processes are caused by thermal expansion and pressure release

BWP



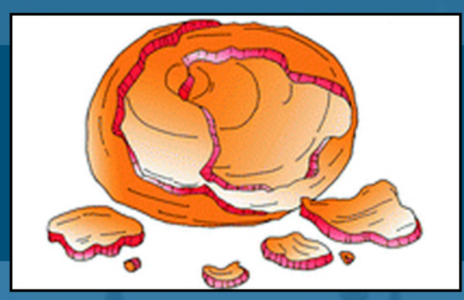
Contribution to/removal of minerals and ions from weathering environment and physical changes due to growth or movement of organisms

Burrowing and wedging by animals exposes new surfaces to chemical attack and assists penetration of moisture and air

Cultivation exposes new earth material to vagaries of weathering

Decaying organic matter produces humic, carbonic and other acids aiding solubility of elements

Plant roots exert pressure on earth materials

Flaking off of more or less curved sheets of shells from over rocks or bedrock results in smooth and rounded surfaces
Occurs due to expansion and contraction induced by temperature changes
Exfoliation domes and tors result due to unloading and thermal expansion

EXFOLIATION