



WEATHERING AND SOILS

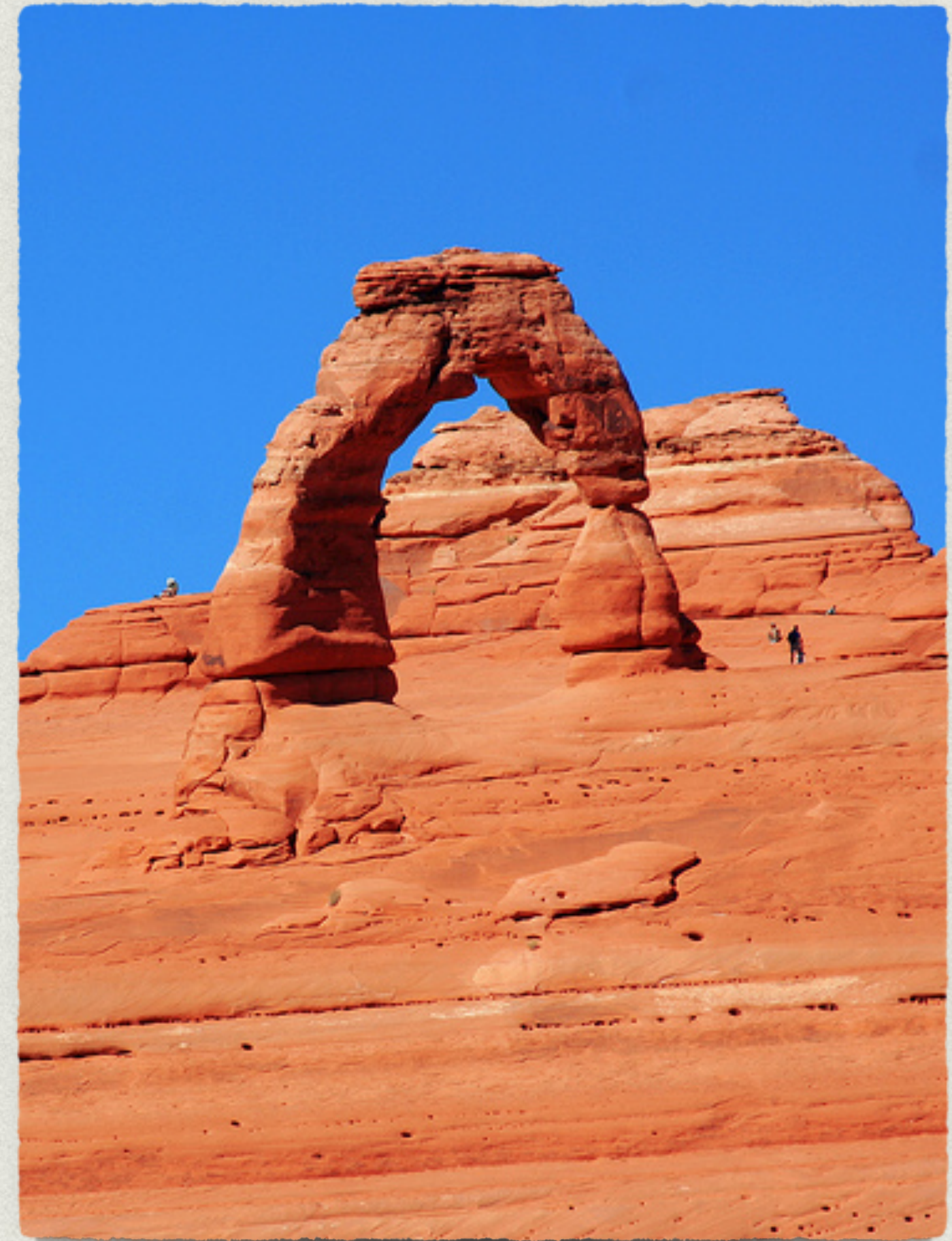
What processes shape our Earth?

WEATHERING AND SOILS



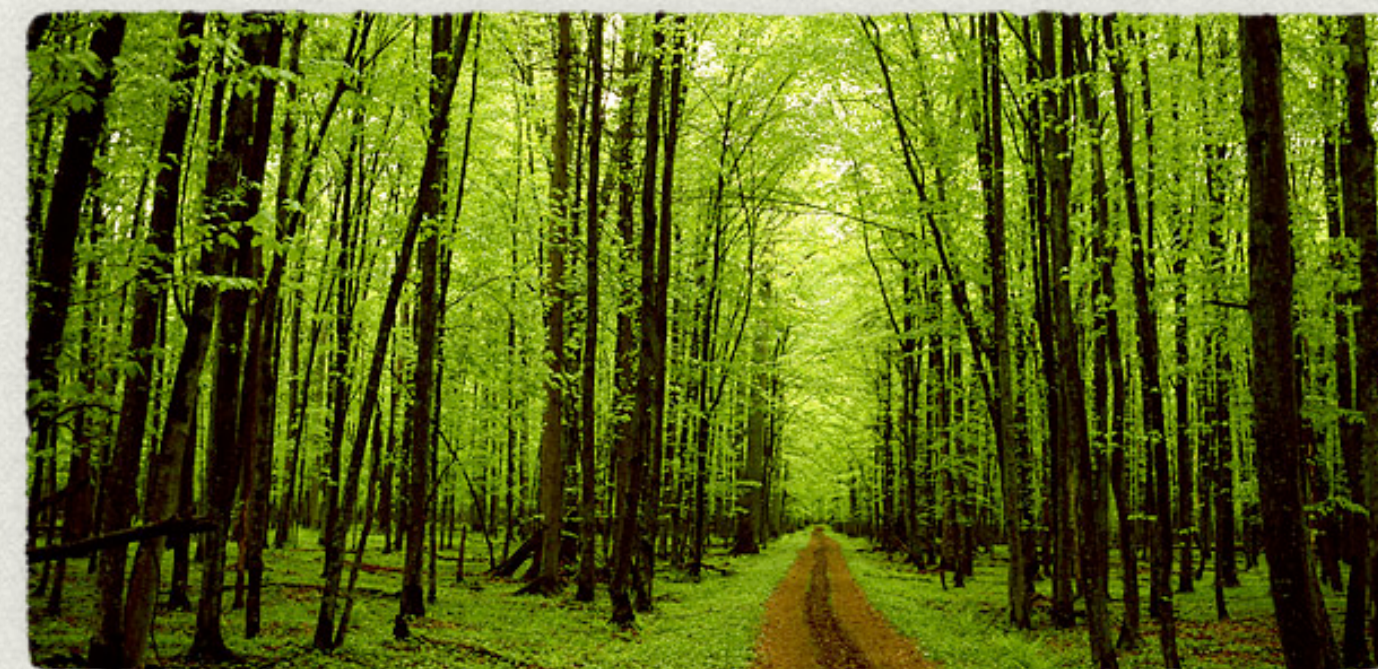
WEATHERING AND SOILS

- Weathering - the breakdown of rock at or near the Earth's surface
- Sediments - smaller pieces of rock that have undergone weathering



WEATHERING AND SOILS

- Weathering occurs when rocks are exposed to:
 - Air
 - Water
 - Actions of Living Things



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- Chemical Weathering - the breakdown of rock through a change in mineral or chemical composition
 - The rate of chemical weathering increases in warm and moist climates



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Before



After

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- Oxidation - when iron combines with oxygen to make rust



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- Effects of Water on Rock:
 - Sometimes called the universal solvent, because given enough time water can dissolve nearly anything
 - Water can combine with CO_2 to form carbonic acid
 - Carbonic acid can dissolve most rock [e.g. limestone]

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- Sinkhole - a natural depression in a land surface formed by the collapse of a cavern roof



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Howe Caverns

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Howe Caverns

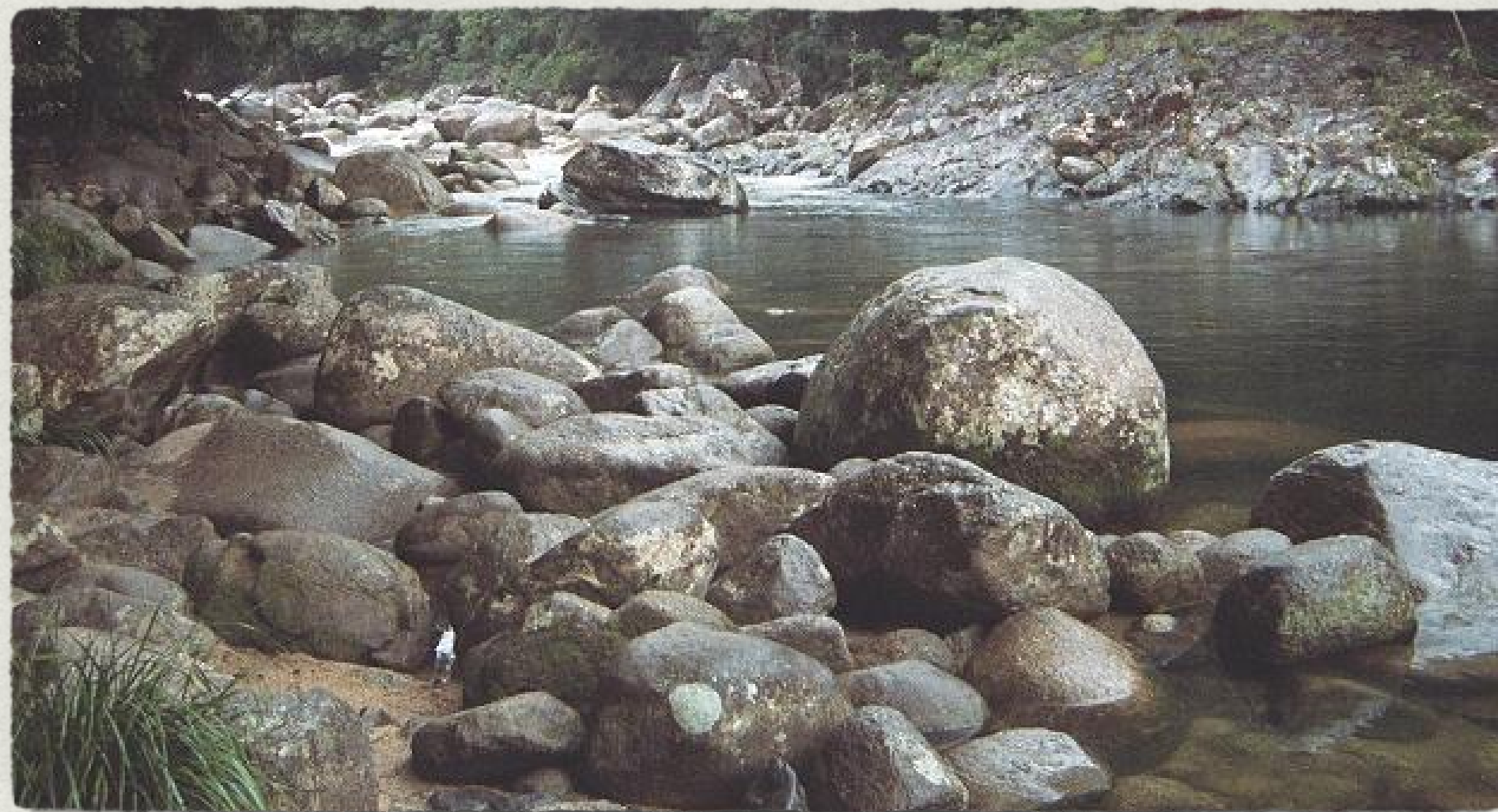
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- Physical Weathering - the breakdown of rock into smaller pieces without chemical change



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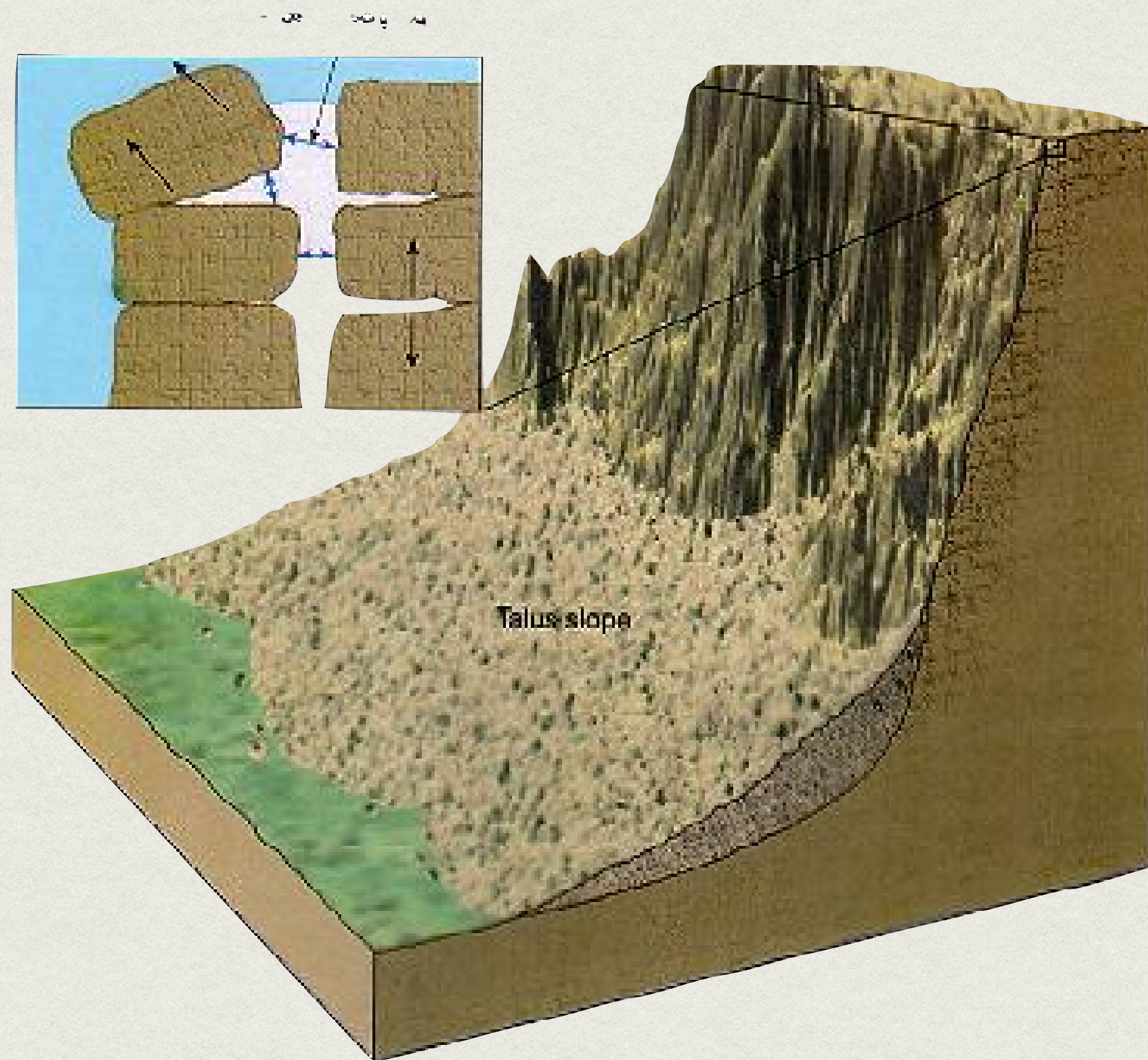
- Abrasion - occurs when rock particles grind against rock
- Characteristics: round shaped rocks



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- Frost Action - weathering process caused by cycles of freezing and thawing of water in rock openings
 - Water infiltrates cracks in the rock and when it freezes expands [approximately 10%] to split the rock apart
 - Infiltration - the process which water penetrates into soil or rock

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Frost Action



Potholes

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- Plant Root Growth - as plants grow they can also spread cracks apart even farther



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- Abrupt Temperature Changes - as temperature increases rocks expand and fracture



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- Physical and chemical weathering processes are important in the formation of soil
- Soil is a mixture of weathered rock particles and organic matter that supports rooted plants



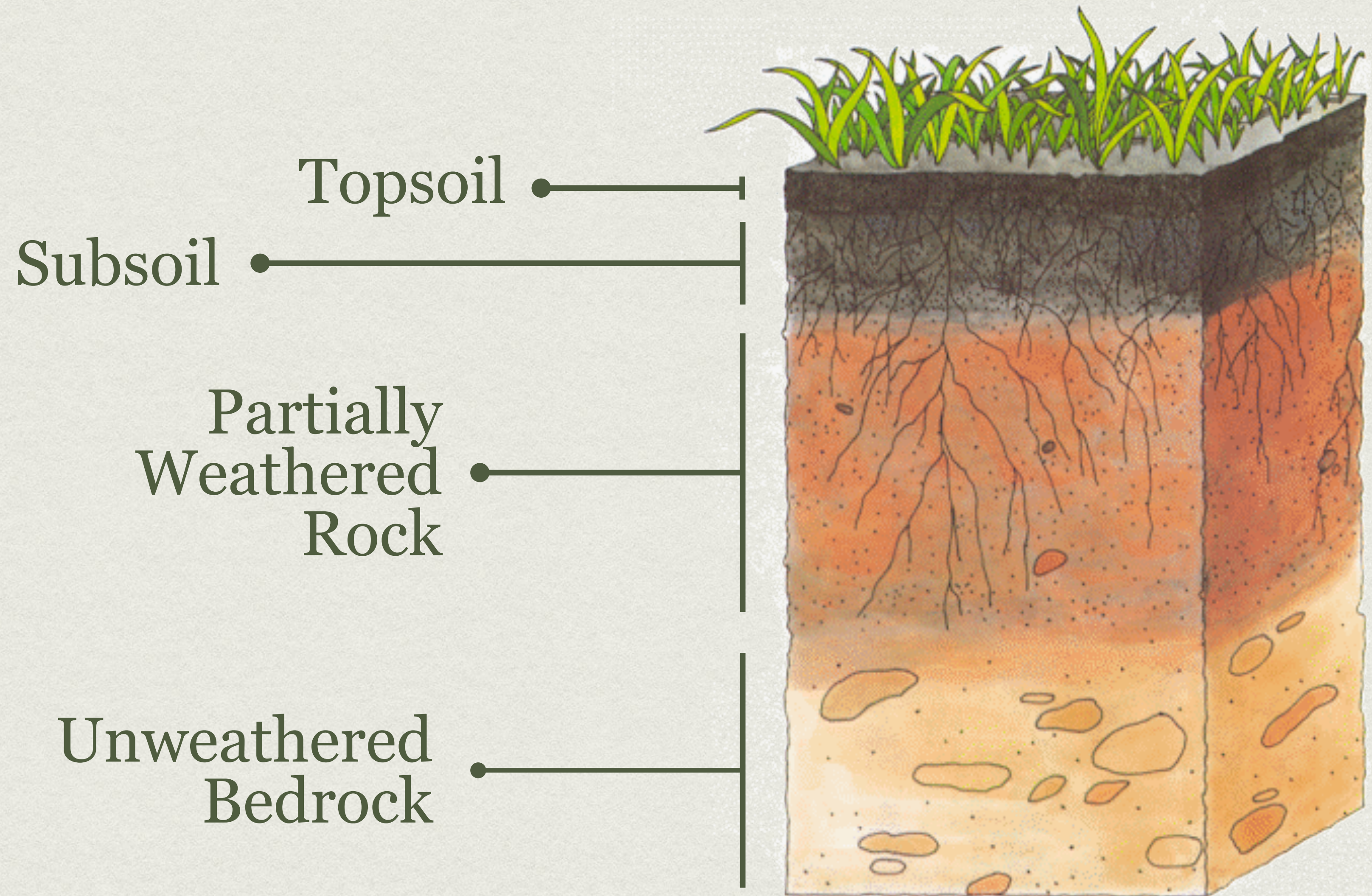
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- Humus - part of the soil that serves as a source of plant nutrients



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- Soil Layers



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