

Mars for Earthlings

LESSON 16: Weathering & Patterned Ground***In-Class Activity 1******Break a Rock!*****Purpose:**

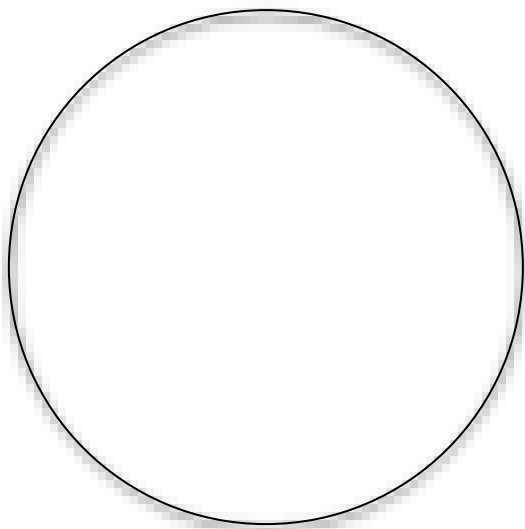
Determine how the physical breakdown of rocks leads to increased rates of weathering and erosion.

Break a Rock!

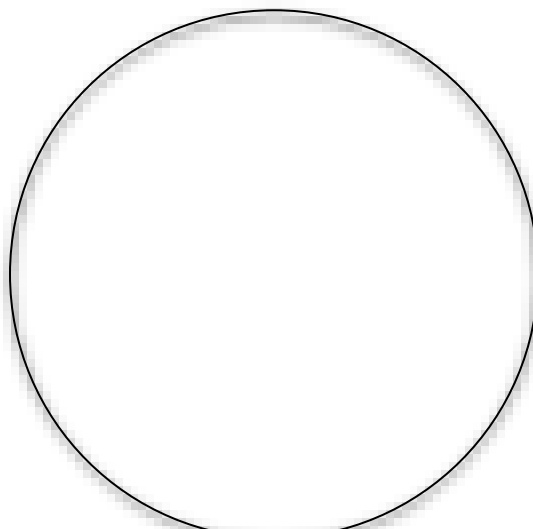
Use the rock hammer and rock provided by your instructor. Break the rock in such a manner that you can see “the middle” of the rock.

Outside vs. Inside

Make a sketch in each circle below of the outside vs. inside of the rock. Note color changes, sizes of crystals, any mottling, etc. Be as observant as possible. Provide some sort of scale to understand the relative sizes of your sketches.



Outside
Scale:



Inside
Scale:

Mechanical vs. Chemical Weathering

List any evidence for mechanical weathering and/or chemical weathering.

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The smaller the better?

1. Do you think smaller features will experience higher rates of weathering? Why or why not? What determines the “rate”?
2. Considering Figure 1, would the concept “the smaller the better” apply here? Why or why not? Note the scale in the caption.

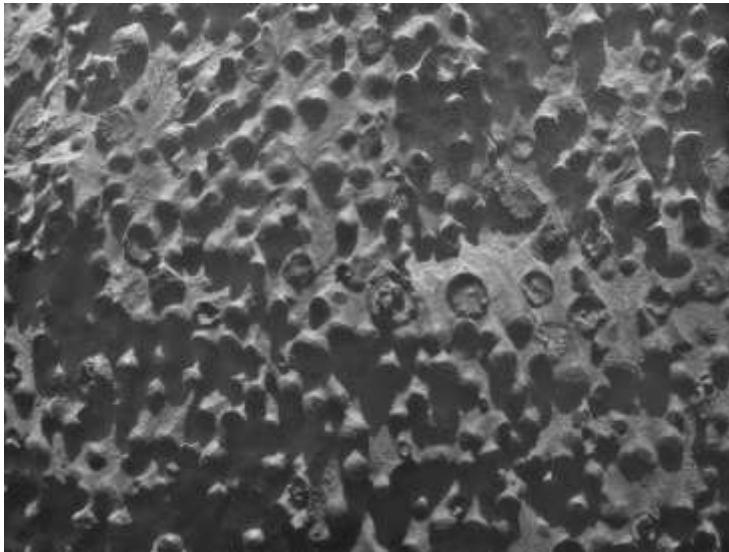


Figure 1: Image taken by rover Odyssey at Endeavor Crater: The view covers an area about 2.4 inches (6 centimeters) across, at an outcrop called "Kirkwood" in the Cape York segment of the western rim of Endeavour Crater. The individual spherules are up to about one-eighth inch (3 millimeters) in diameter. Image Credit: NASA/JPL-Caltech/Cornell Univ./ USGS/Modesto Junior College

To sum it all up...

List the three most important factors that determine the rate of weathering.