Topic: Factors Affecting Weathering Rate
1) **Exposure** to air, water, & living things increases weathering rates.
Total surface area of cube: 6 square units

Total surface area following disintegration: 12 square units
2) **Particle Size** -

More surface area will increase weathering rate.
Different Compositions

Granite
An obvious example of how weathering differs with different mineral solubilities
3. **Different Composition** - Minerals have different resistances to weathering.

   Ex) Quartz very resistant!
The presidential faces on Mount Rushmore are carved into chemically resistant granite.
4) Pollution rate increases - weathering rate increases
Stone decay and atmospheric pollution
How does climate affect weathering rates?

Cleopatra's Needle, inscribed Egyptian hieroglyphs is 3000 years old. Was moved to NYC in the 1880’s.
Alexandria Egypt 1875
Mrs. Burns’ trip to Cleopatra’s Needle, NYC, 2008

Salt weathering of red granite
5) Climate influences weathering

Temperature & precipitation makes up an area’s climate

Long Island

Rainfall: 117.1 cm (46 inches)
Temperature: 10.7°C (51.2°F)
a) **Physical weathering:**
Best in ________ climates with freezing & thawing of water.

b) **Chemical weathering:**
Best in ________, ________ climates.
FQ:

What effect does increased surface area have on weathering rate?
A little holiday humor…