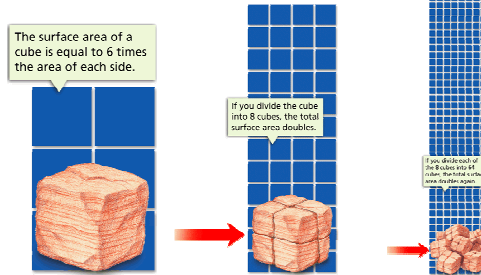


Weathering Notes

- **Weathering:** breaks down rock and other substances
- **Erosion:** removal of rock particles by wind, water, ice, and gravity

Weathering affects the surface area of rock. The more a rock is weathered, the more surface area is exposed, the faster weathering acts!



How do we know?

- Weathering and erosion have been occurring on Earth since our atmosphere first formed, billions of years ago. **How do we know?**
- **Uniformitarianism:** same processes that operate today operated in the past
 - Evidence we have supports theory
 - No evidence against theory

Types of Weathering

- **Mechanical Weathering:** physical breaking down of rock
 - Release of pressure
 - Freezing and thawing
 - Animal actions
 - Plant growth
 - **Abrasion** (wearing away by particles carried by wind and water)

Types of Weathering

- **Chemical Weathering:** breaks down rock by chemical changes
- (**chemistry:** *substances interacting and changing other substances*)
 - **Water (H₂O):** lots of substances dissolve in water
 - **Oxygen (O₂):** (oxidation: iron combining with oxygen to produce rust)
 - **Carbon dioxide (CO₂):** forms weak acid in water
 - **Living organisms:** also produce weak acids
 - **Acid rain:** pollution from burning fossil fuels mixes with rain

How fast?

- What is the rate of weathering, or how fast does weathering occur? Depends
 - Type of rock
 - **permeable rock** (rock with small holes)
 - Climate
 - Human activities