

# Chapter Ten: The Rock and Fossil Record

## Section 4: Time Marches On

**Geologic time scale:** scale that divides the 4.6 billion year history into distinct intervals of time

- Way to outline the development of the earth and life on earth
- Divisions of time (largest to smallest)
  - Eons → eras → periods → epochs
    - Hadean eon
      - Only rocks here are from meteorites and the moon
    - Archean eon
      - Earliest known rocks on Earth
    - Proterozoic eon
      - First organisms with well-developed cells
    - Phanerozoic eon
      - The eon we live in
  - *Paleozoic Era*: means “old life”
    - First era with well represented fossils
    - At the beginning, there were no land organisms
    - Era came to an end with mass extinction (90%)
  - *Mesozoic Era*: means “middle life”
    - Age of Reptiles
    - Dinosaurs roamed the earth
    - Birds evolved from the dinosaurs present during this era
    - 50% of organisms during this era were extinct
  - *Cenozoic Era*: means “recent life”
    - This is the era we live in
    - Age of mammals
    - Saw animals like woolly mammoths, saber-toothed cats, and giant sloths

Imagine 4.6 Billion years as 12 hours in a day

- Start at Noon
  - Hadean eon would last about 2 hours
  - Archean eon would last about 3  $\frac{1}{4}$  hours
  - Proterozoic eon would last about 5 hours
  - Phanerozoic eon would last 1  $\frac{3}{4}$  hours
    - Humans wouldn't be present until the last few seconds before midnight