

# Geologic Time Objectives

**Correctly define:** principle of uniformitarianism, correlation, outcrop, index fossils, anomalies, unconformity, isotopes, outgassing, principle of superposition

## **GEOLOGIC TIME:**

- Explain that humans and dinosaurs never lived at the same time.
- Use the Earth Science Reference Tables to correctly place events on a geologic time line.
- Use the Earth Science Reference Tables to identify where in NY State rocks containing fossils would be likely to be found and not found.

## **RELATIVE AGE:**

- Determine the relative age of rock layers based on the following criteria:
  - **principle of superposition---oldest rock layers on bottom**
  - **intrusions are younger than the rocks they cut through**
  - **faults and folds are younger than the rocks they cut through**
- Determine the relative age of an igneous intrusion/extrusion based on evidence of contact metamorphism.
- Explain what an unconformity is and why it is important in dating rock layers.
- Correlate rock layers based on index fossil evidence.

## **ABSOLUTE AGE:**

- Explain how radioactive elements can be used to calculate the absolute age of a rock layer.
- Explain why radioactive isotopes are reliable to calculate absolute age.
- Calculate the absolute age of a rock based on radioactive decay data.
- Identify  $C^{14}$  as the radioactive isotope useful in determining the absolute age of organic materials

## **THEORY OF EVOLUTION:**

- Explain the theory of evolution.
- Explain how the fossil record supports this theory.