

**LEARNING OBJECTIVES**

- 1) Give the age of the Earth and how it is determined. Explain how Earth got its atmosphere and oceans and why life would have trouble surviving during the first half billion years after Earth formed.
- 2) List the three major layers of the earth's interior, giving properties (density, phase and composition), location and describe how these layers came to be (the role of differentiation).
- 3) Define the scientific theory of 'Plate Tectonics', list three observed pieces of evidence supporting this theory, and explain the mechanism behind it.

Required Textbook readings for class 6: pages 114 – 126

1. How old is the Earth, and what is the evidence that gives us this value?
2. How and when did Earth gain its water?
3. What drives outgassing and what is its role in creating the Earth's atmosphere and oceans?
4. What is a sterilizing impact? How late did these still occur on Earth? Where was early life safest?
5. How does seismology reveal the interior of the Earth?
6. What is differentiation and how did it give Earth its layered interior?
7. Why did the Moon, Mars and Mercury cool off at their center while the Earth remained hot?
8. Who suggested and why the idea of Continental Drift and why was it not widely accepted?
9. What is occurring at the seafloor spreading centers? What drives the motion of plates?