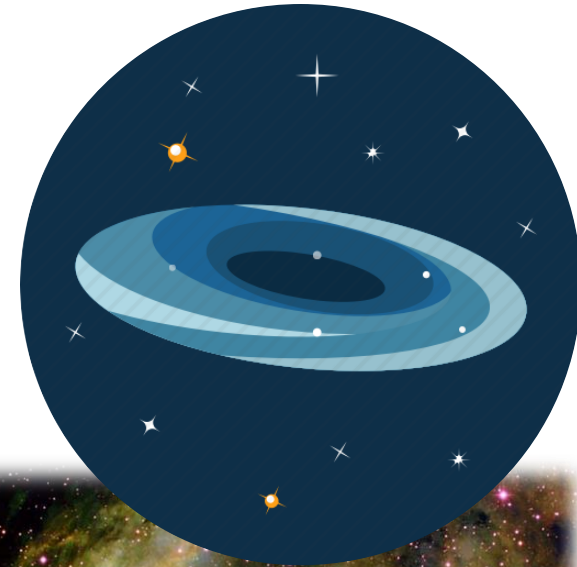


Formation of Earth: Geosphere

EQ: Explain how Earth was formed from dust & matter into a planet.

- The *Nebular Hypothesis* is the currently accepted argument about how a Solar System can form.
- A large gas cloud (nebula) begins to condense and rotate
- Gravitational attraction causes the dust and matter to collect the larger chunks collect faster and faster until everything in their path is swept up



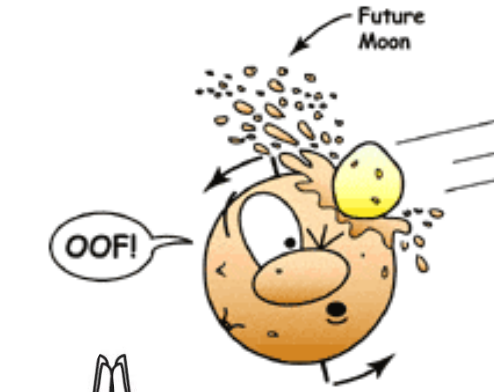
Formation of Earth: Geosphere

The Early Earth Heats Up:

Three major factors that caused heating and melting in the early Earth's interior:

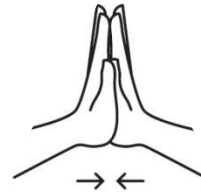
1. Collisions

- Transfer of kinetic energy into heat



2. Compression

- Compacting matter



3. Radioactivity of elements

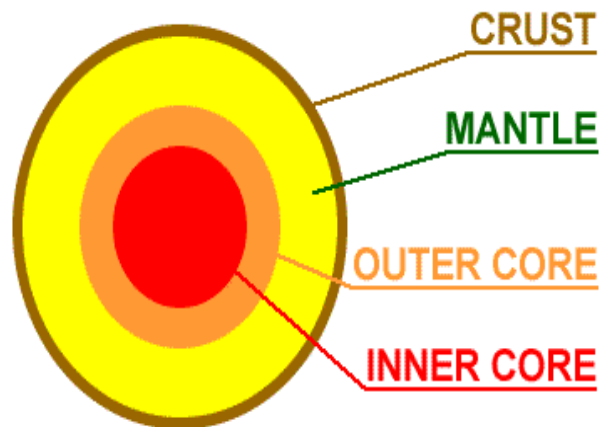
- Ex: uranium, potassium, or thorium



Formation of Earth: Geosphere

- **100 Million Years Later:**
 - Temperatures at depths of 400-800 km below the Earth's surface reach the melting point of iron.
 - Global chemical differential (the heavier elements) began to sink down into the core of the Earth, while the lighter elements such as oxygen and silica floated up towards the surface.

Layers of the Earth



← Draw
& Color

Formation of Earth: Geosphere

- **Chemical Composition of Earth:**
 - Each of the major layers has a distinctive chemical composition, with the crust being quite different from the Earth as a whole

