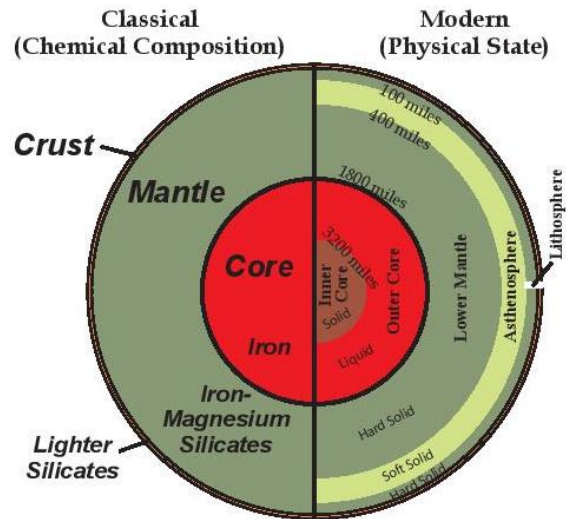


# DIG DEEPER into Southern Illinois: Oreo Earth!

Don't eat those Oreos just yet! We'll use them to dig deep into PLATE TECTONICS!

The term TECTONICS originates from the Greek word "tektōn," referring to a builder or architect. Plate tectonics suggests that large features on Earth's surface, such as continents, ocean basins, and mountain ranges, result from interactions along the edges of large plates of Earth's outer shell, called the LITHOSPHERE (Greek "lithos," hard rock). The plates, composed of Earth's crust and uppermost mantle, ride on a warmer, softer layer of the mantle, the ASTHENOSPHERE (Greek "asthenos"). Under all this is the core of the earth.



*Fig. 2. Gross layers of the Earth. Left: The classical division of the Earth is according to **chemical composition**, the heavier materials concentrated toward the center. Right: In modern times the three chemical divisions are classified into five zones according to **physical state** caused by temperature and pressure changes within the Earth.*

Earth's lithosphere is broken into a mosaic of seven major and several minor plates.

Motions between plates define three types of boundaries:

**DIVERGENT:** plates rip apart, creating new lithosphere

**TRANSFORM:** plates slide past one another, neither creating nor destroying lithosphere

**CONVERGENT:** one plate dives beneath the other and lithosphere is destroyed. One plate eventually slides beneath the other causing a process known as SUBDUCTION.

