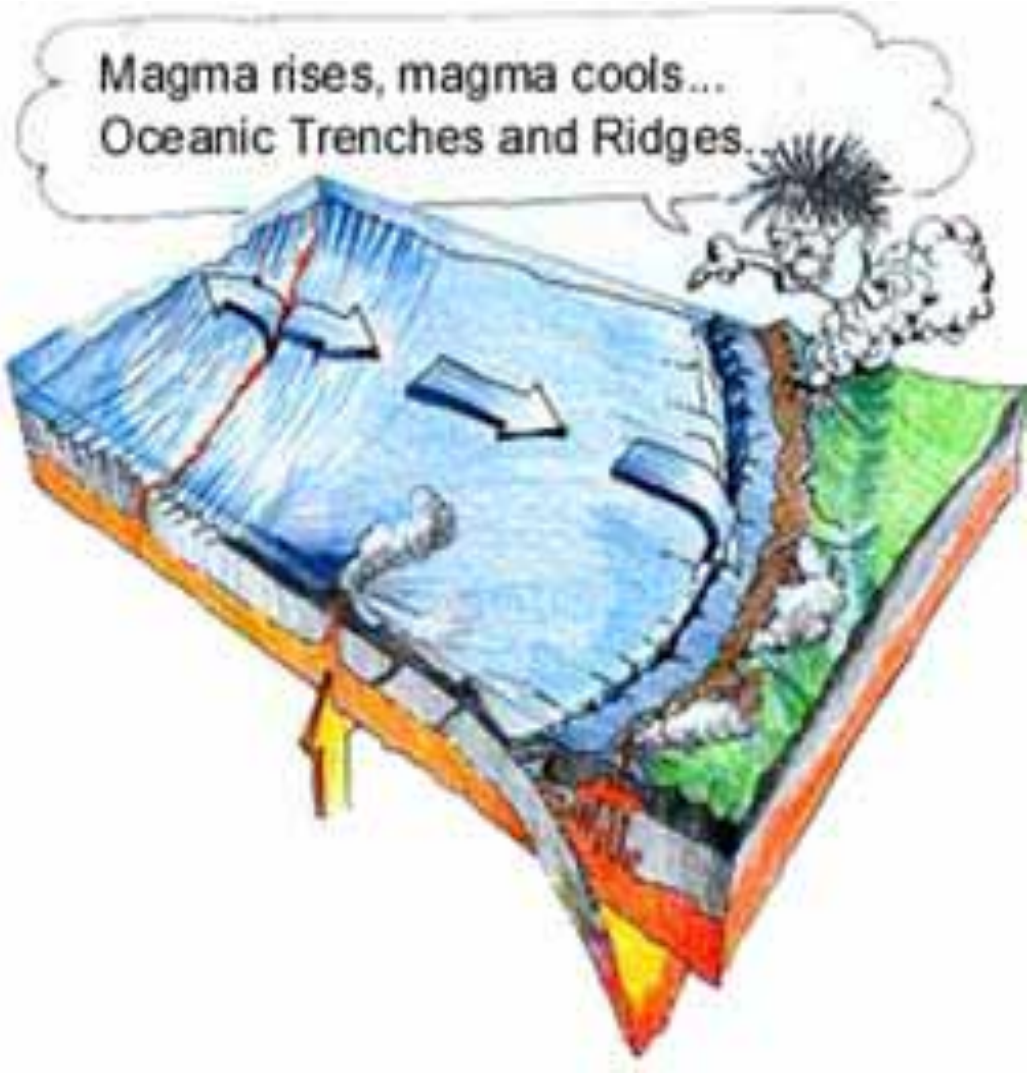
Subduction in Deep-Ocean Trenches



As the ocean spreads apart, it also plunges into deep water canyons called deep-ocean trenches.

Subduction is the process by which the ocean floor sinks beneath a deep-ocean trench and back into the mantle.

Chapter 10 Section 3 Part 1

I can explain how plate movement relates to earthquakes, mountain building, volcanoes, and sea floor spreading.

SPI 0707.7.6 Describe the relationship between plate movements and earthquakes, mountain building, volcanoes, and sea floor spreading.

Essential Questions

- What is the theory of plate tectonics?
- How do plate tectonics relate to volcanoes, mountains, and earthquakes?
- What makes up the composition of Earth's plates?
- What is the lithosphere and asthenosphere?

What Mastery Looks Like

12 **The thinnest layer of Earth ranges in thickness between 7 kilometers and 70 kilometers. Which layer is being described?**

F crust

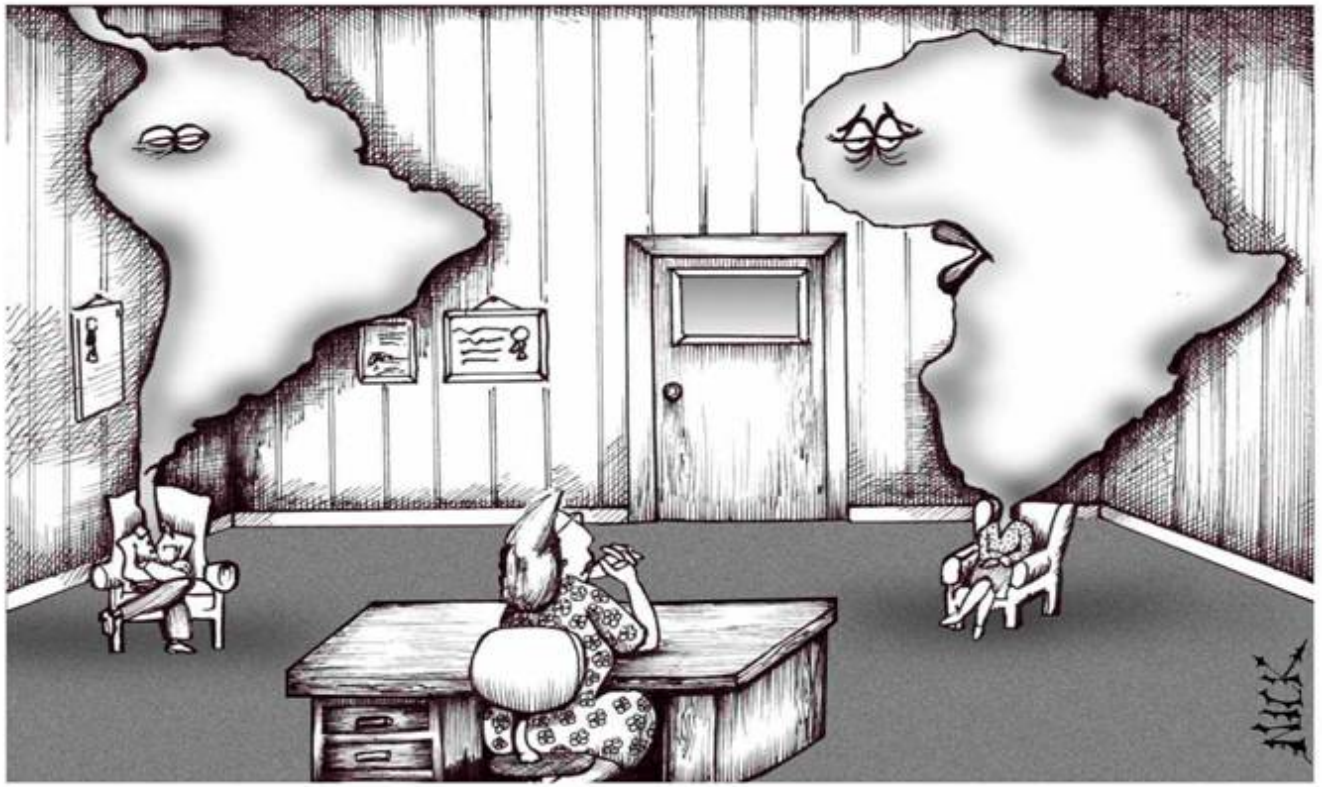
G mantle

H outer core

J inner core

Plate Tectonics

- What do you know about plate tectonics?
  - Write down at least 3 bullet points on your white boards that tell me what you know.



"Well looking back I suppose it's been going on for quite some time, but I only noticed we were drifting apart during the last 50 million years..."

Plate Movement

- In the 1960s, scientists developed a new theory that combined continental drift AND seafloor spreading.
- According to the theory of ***plate tectonics***, Earth's crust and part of the upper mantle are broken into sections. These sections are called ***plates***.

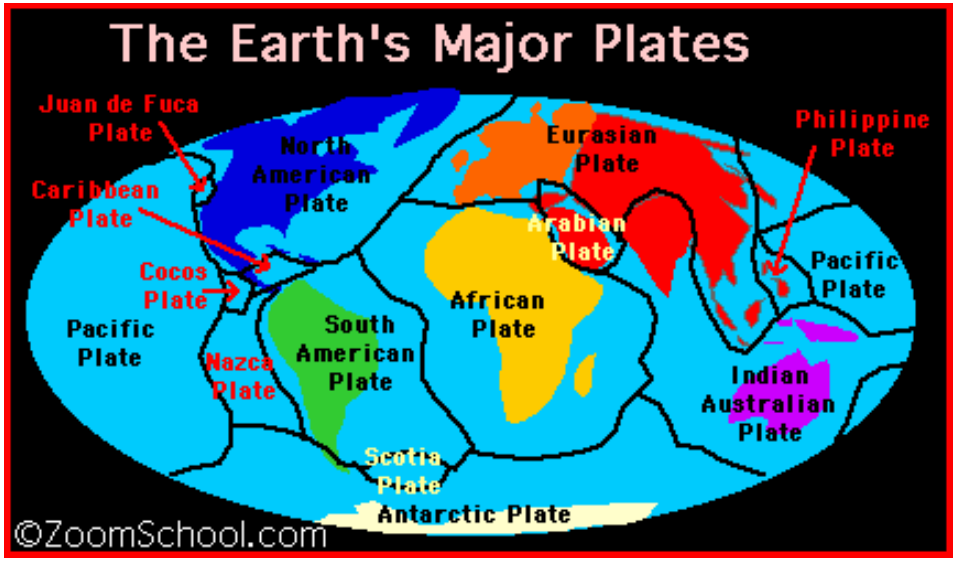
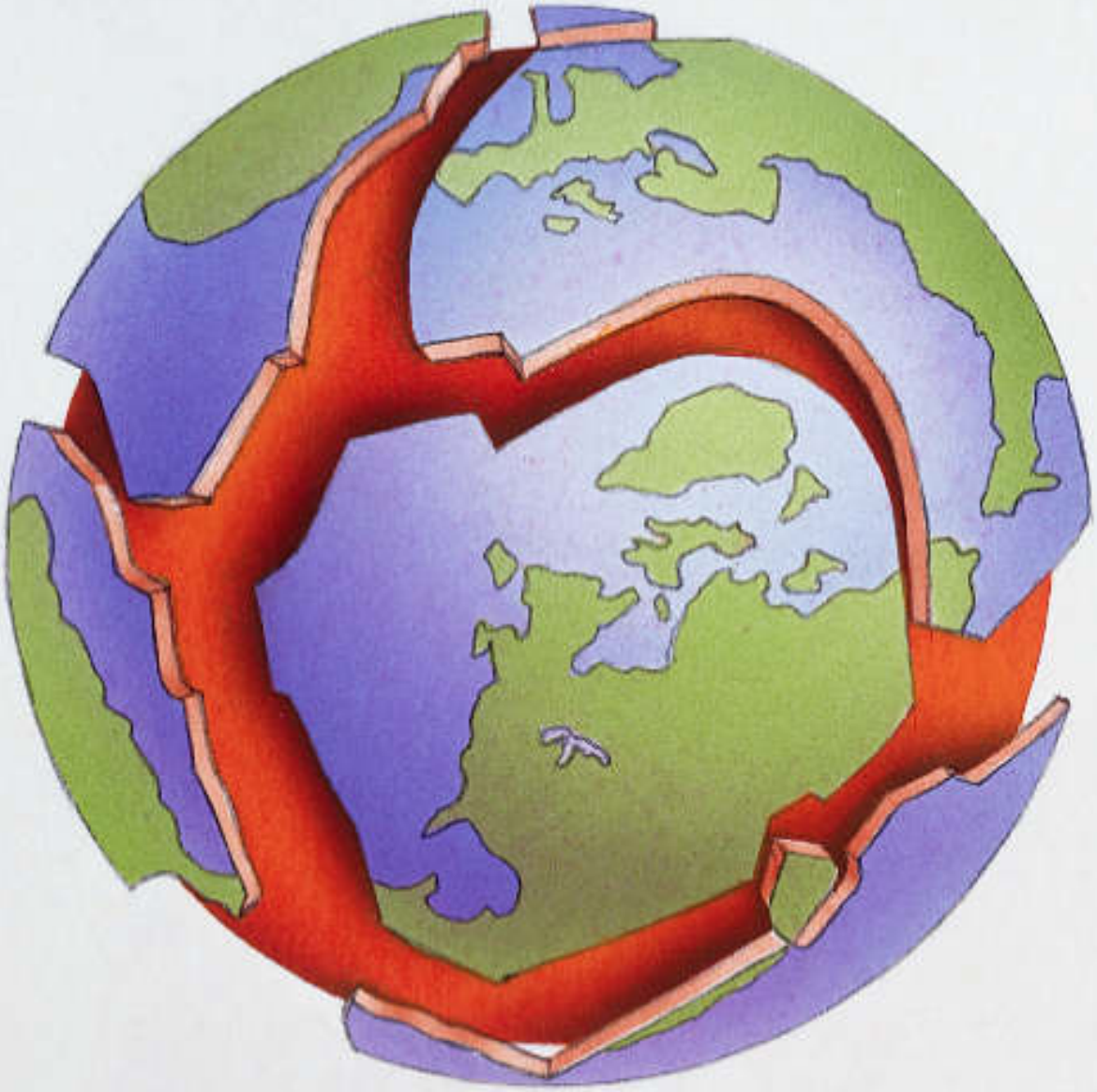
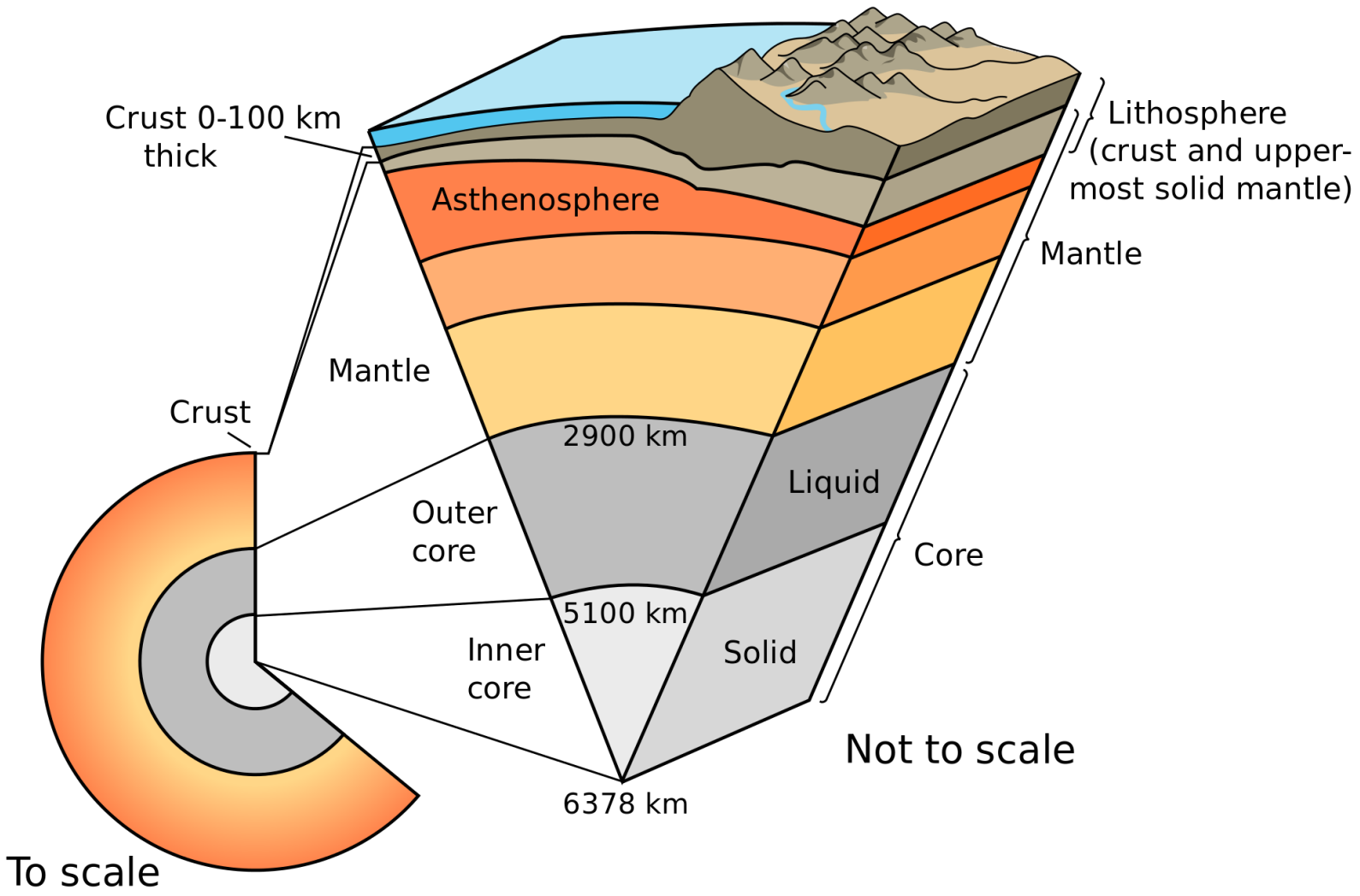


Plate Movement

- How do these plates move?
- They move on a plasticlike layer of the mantle.
- They can be seen as rafts.



Know this!


Crust 0-100 km thick
Lithosphere (crust and upper-most solid mantle)
Asthenosphere
Mantle
Mantle
Crust
2900 km
Liquid
Outer core
Core
5100 km
Inner core
Solid
Not to scale
6378 km
To scale

Composition of Earth's Plates

- What is the composition of the plates?
- Plates are made of the crust and a part of the upper mantle. (Lithosphere)
- The Lithosphere is about 100 kilometers thick. (about 60 miles)
- The Lithosphere is generally less dense than material underneath.

Composition of Earth's Plates

- The plasticlike layer below the lithospehre is called the asthenosphere.
- The rigid (less dense) plates float and move around on the asthenosphere.

Activity

- Milky Way

Chapter 10 Section 3 Part 1

I can explain how plate movement relates to earthquakes, mountain building, volcanoes, and sea floor spreading.

SPI 0707.7.6 Describe the relationship between plate movements and earthquakes, mountain building, volcanoes, and sea floor spreading.

Exit Ticket

12 **The thinnest layer of Earth ranges in thickness between 7 kilometers and 70 kilometers. Which layer is being described?**

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