

Tuesday, March 18th

- Lesson 7 Guiding Question Review (H110)
- Lesson 8 Getting Started (H111)
- Modeling Convection in the Mantle (H112)

- **HW:**
 - Review L8 items on the study guide
 - XPT Lessons 4-8 Quiz on Thursday

Study Guide Pacing

- ~~Thursday: Review Lesson 4~~
- ~~Friday: Review Lesson 5~~
- ~~Saturday: Review Lesson 6~~
- ~~Sunday: Review Lesson 7~~
- ~~Monday: Review Lesson 7 (or your choice)~~
- Tuesday: Review Lesson 8
- Wednesday: Review weakest areas

L7 Guiding Question Review (H110)

- Answer each of the guiding questions.
- Make a claim
 - Usually a statement of fact that answers the question, or
 - A statement that states a relationship between two ideas.
- Support with evidence
 - Use lab data and ideas!

How do rocks change when earth's plates move?

- **Claim:** Rocks can bend or break when earth's plates move.
- **Evidence:**
 - Rocks near the earth's surface will break because they are cooler. This was demonstrated when we broke a cold caramel.
 - Rocks within earth (i.e. mantle) will bend because the heat makes them more ductile.

How do rocks change when earth's plates move?

- **Claim:** Rocks can bend or break when earth's plates move.
- **Evidence (2):**
 - Plates move rocks from the surface to earth's interior causes these different changes to occur.
 - Granite changes to gneiss as a result of plate movement. Granite's grains are arranged into layers.

How does force relate to plate movement?

- **Claim:** Large forces are needed to move plates due to the friction between the plates.
- **Evidence:**
 - In our lab we learned that as friction increases the amount of force needed to move the plates increases.
 - As plates move past each other, friction is generated by rocks grinding against each other and becoming "stuck."

How does force relate to plate movement?

- **Claim:** Large forces are needed to move plates due to the friction between the plates.
- **Evidence (2):**
 - The more friction that is generated, the more force that is needed to overcome the friction.

How are earthquakes explained by plate movement?

- **Claim:** The movement of plates is the cause of most earthquakes.
- **Evidence:**
 - As plates move past each other, they can become “stuck.” This generates friction.
 - When the force of the moving plate is greater than the amount of friction, the plate suddenly moves causing an earthquake.

Looking Ahead

- So far we have learned:
 - Earth's surface is divided into plates.
 - The plates used to be joined together as one supercontinent called Pangaea
 - This is supported by evidence which includes similar mountain ranges and fossils on the continents
 - We have learned the plates move and interact with each other at three types of boundaries.

Looking Ahead

- So far we have learned:
 - The movement of the plates causes rocks to break or bend.
 - The movement also explains why earthquakes occur and why volcanoes form.
- Now the last question we need to answer:
 - What causes the plates to move?

Lesson 8 Getting Started (H111)

- **Purpose:** To recall previous experiences you have had with convection
- **GQ:**
 - How is convection connected to plate movement, earthquakes, and volcanoes?

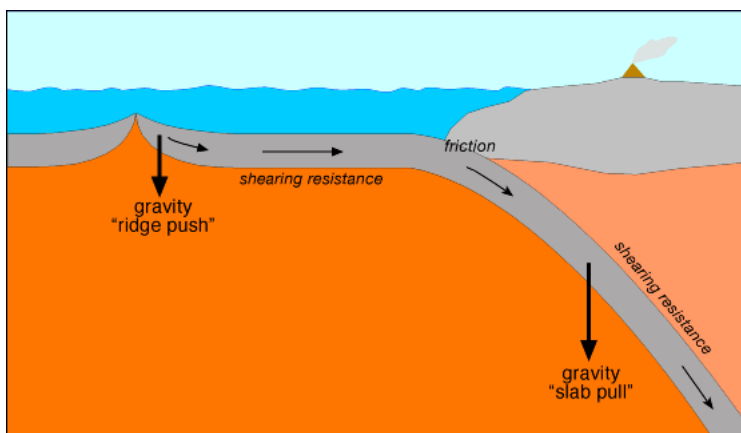
Lesson 8 Getting Started

- Answer all parts to questions 1 and 2 with your group.
- Take about 5 minutes to do this and then we'll share out.

Slab Pull

- One driving force of plate movement.
- Write this down on your sheet:
 - **Old slabs of oceanic crust are more dense and sink, pulling the crust with it into the mantle.**

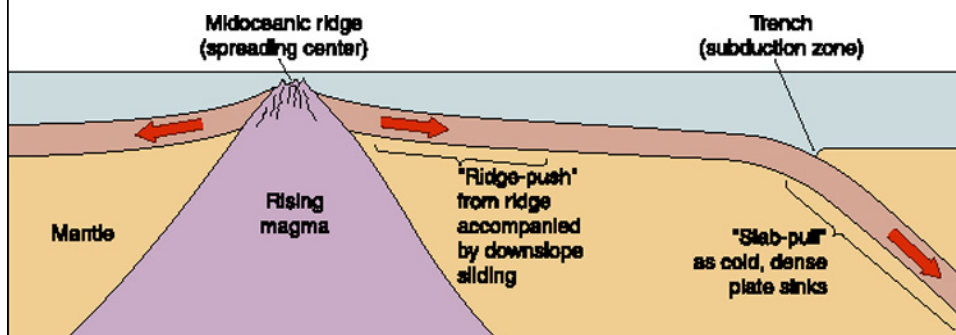
Slab Pull



Ridge Push

- Another driving force of plate movement.
- Write this down on your sheet:
 - Gravity-driven mechanism that causes crust to “slide” down the an ocean ridge, moving the plate.

Ridge Push



Convection

- The primary driving force of plate movement.
- Write this down on your sheet:
 - **The movement caused by a substance heating up, becoming less dense, and rising, then cooling, becoming more dense, and sinking. This creates a circle of motion known as a convection cell.**

