

September 15, 2016

Aims:

- ✓ **SWBAT** explain how convergent boundaries shape Earth's surface.

Agenda

1. Do Now
2. Class Notes
3. Guided Practice
4. Independent Practice
5. Practicing our AIMS:
 - ✓ Homework: El.12 – Convergent Boundaries

How will you help our class earn all of our S.T.R.I.V.E. Points?

“Don't find
fault, find
a remedy.”

Henry Ford

Aim Check:

What word is related to convergent?

List three features/effects found at convergent boundaries

SCIENCE 8

Convergent Boundaries

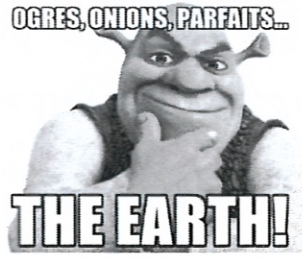
El.12

Name: KEY

Date: _____

Homeroom: _____

Earth's Interior
OGRES, ONIONS, PARFAITS...



OBJECTIVES: By the end of class, students will be able to...

✓ **SWBAT** explain convergent boundaries shape Earth's surface.

DO NOW

Read and ANNOTATE the information before you answer the questions.

- The tectonic plates of Earth are part of Earth's:
 - crust.
 - mantle.
 - lithosphere.
 - asthenosphere.
- Select the **two** features created by a divergent plate boundary.
 - the Great Rift Valley of East Africa
 - the Marina Trench
 - the San Andreas Fault
 - the Mid-Atlantic Ridge
- The East African Rift is an example of:
 - a continent-continent convergent boundary.
 - an ocean-ocean convergent boundary.
 - a continent-continent divergent boundary.
 - an ocean-ocean divergent boundary.

CONCEPT CHECK:

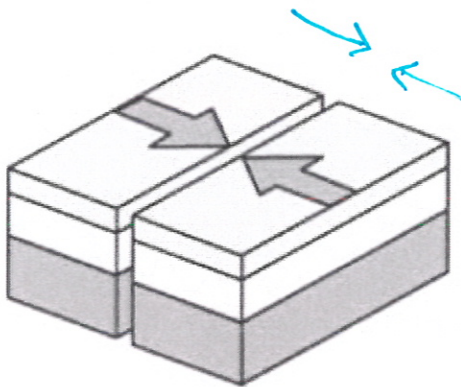
CLASS NOTES

CONVERGENT BOUNDARY

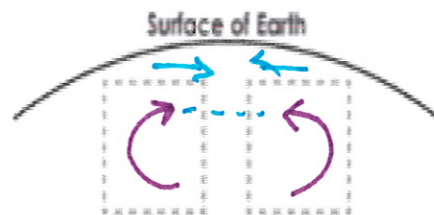
→ CONVERGENT BOUNDARY: Tectonic plates move toward each other

Note to Self:

Convergent = collide



Convection Current Movement at a Convergent Plate Boundary



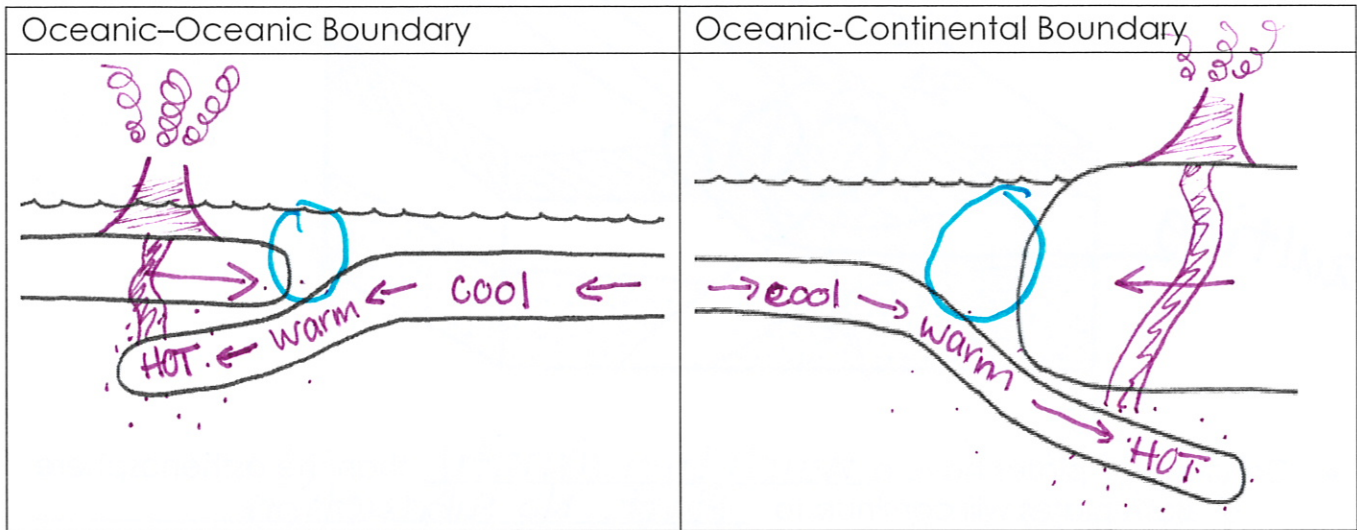
CONVERGENT BOUNDARY FEATURES

Oldest crust is ~ 65-100 million years ~~ago~~ old. Where does the rest go?

Note to Self:

Convergent boundaries consume lithosphere

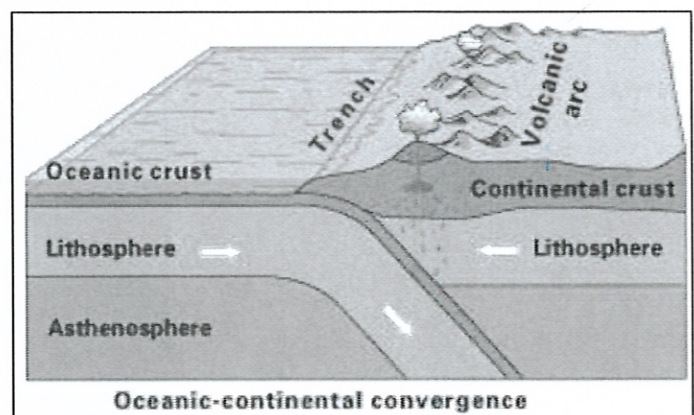
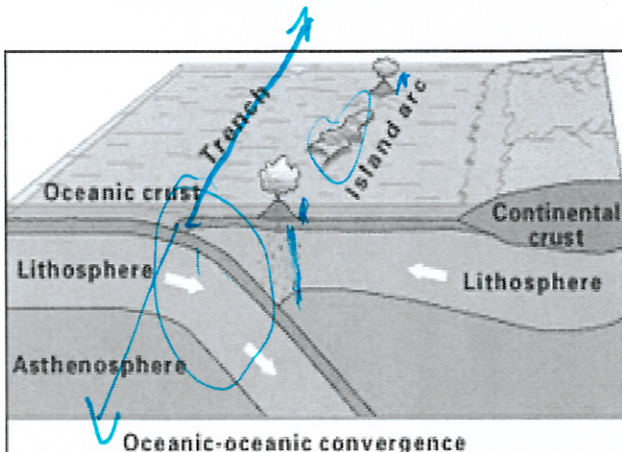
IN THE OCEAN: Oceanic plates converge with other oceanic plates and continental plates.



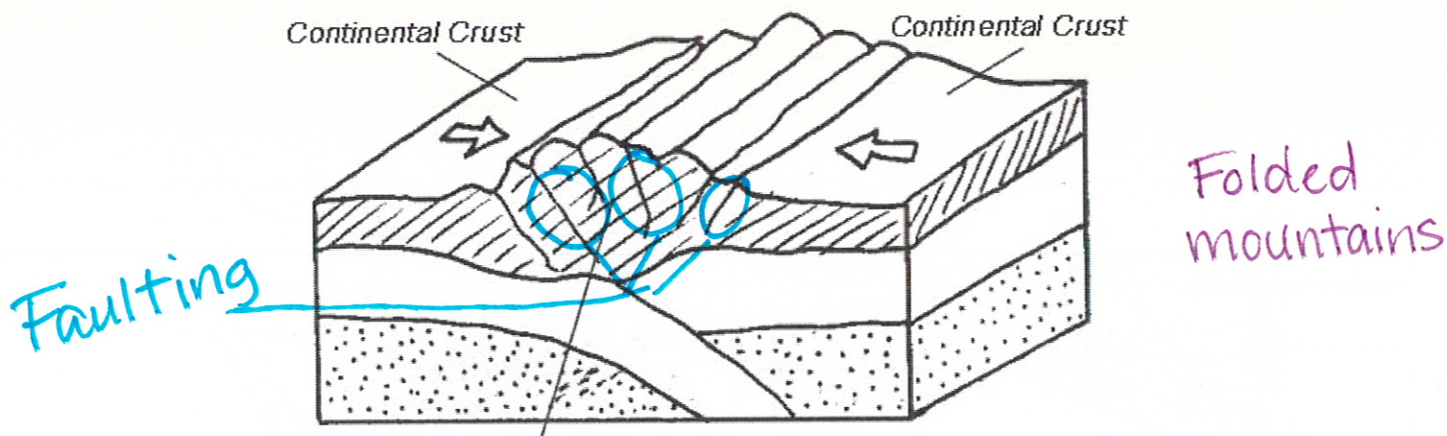
→ **SUBDUCTION:** Movement of the edge of a tectonic plate into the mantle BENEATH another plate.

→ **TRENCH:** A long, narrow, deep depression in the ocean floor

- Convergent boundaries destroy crust
- Old oceanic crust is more dense than new oceanic crust
- Oceanic plates are more dense than continental plates
- Creates volcanoes and mountains
 - At oceanic-oceanic: Island arcs
 - At oceanic-continental: Volcanic mountains



ON LAND: This is the least understood of the plate boundary movements.



- Continental plates have a much lower density than the asthenosphere
 - Both plates will continue to float. No subduction
 - Causes faulting and folding

→ **FOLDED MOUNTAIN:** Forms when rock layers are compressed and pushed upwards.

- Some of the highest mountains in the world



Appalachian Mountains



Himalaya Mountains
(Mount Everest is here!)



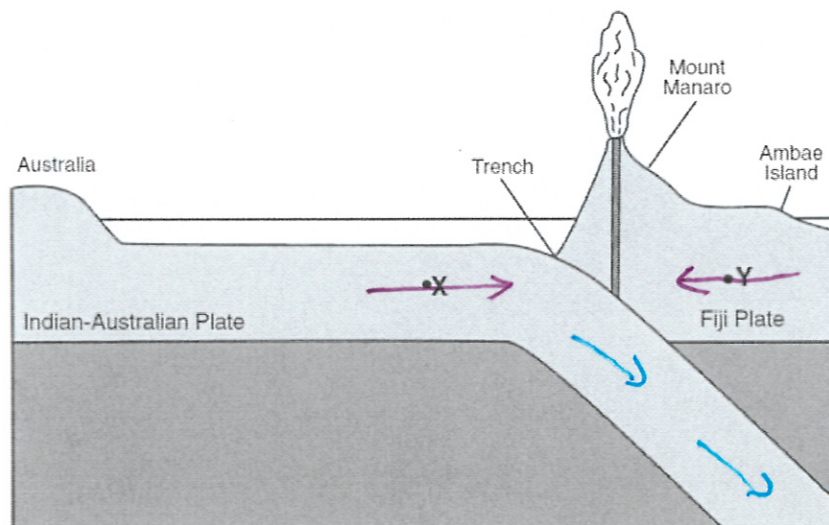
GUIDED PRACTICE

Directions: Read and ANNOTATE each question before you solve the problem.

Support your selection by finding evidence to support your answer OR evidence to support why another is incorrect. Start your explanation with "The evidence shows that..."

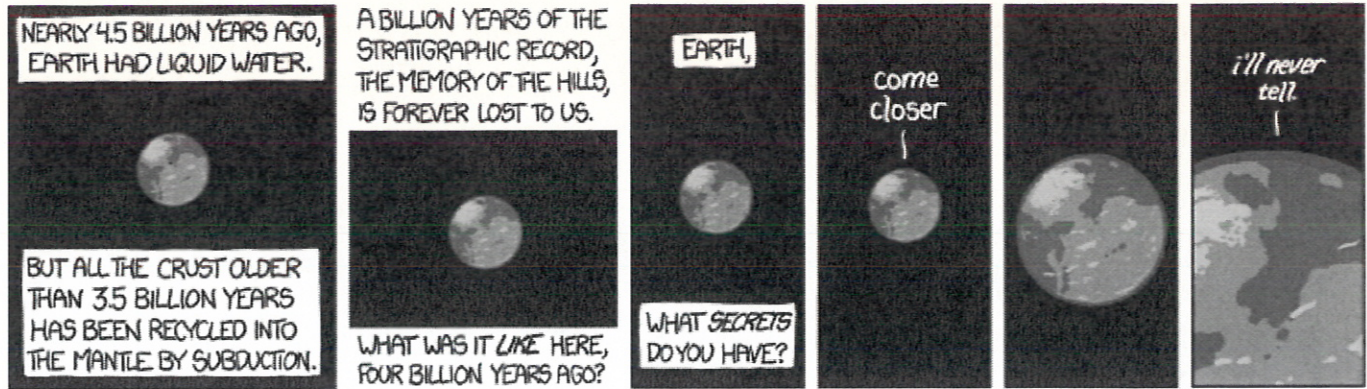
Question	Supporting evidence
<p>1. What happens when a piece of continent reaches an ocean subduction zone?</p> <p>A. An island arc is formed</p> <p>B. A folded mountain is formed</p> <p>C. The oceanic plate is subducted.</p> <p>D. The continental plate is subducted.</p>	
<p>2. Which two landforms are caused by convergent boundaries?</p> <p>A. a ridge and rift valley</p> <p>B. a trench and a mid-ocean ridge</p> <p>C. a rift valet and an ocean trench</p> <p>D. an ocean trench and a mountain range</p>	

3. On the diagram, draw one arrow through point X and one arrow through point Y to indicate the direction of tectonic plate motion near Mount Manaro.



Check Yo'self:

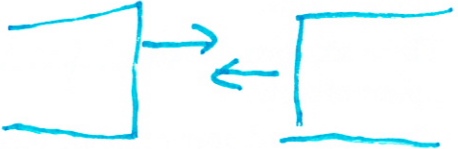
Use the concept of subduction to explain why Mr. Searles finds this comic amusing.
Use **ICE** to support your conclusion

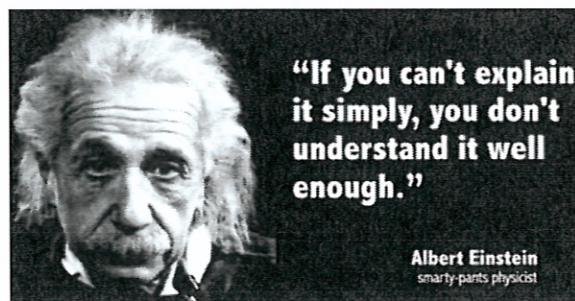


Blank response area for student answer.

INDEPENDENT PRACTICE

Directions: For each key term, explain the "big idea" to a kindergartener. Then, draw a picture to illustrate the word.

Term	Concept	Picture
<p>Convergent Boundary</p>	<p>Tectonic plates moving towards each other</p>	
<p>Subduction Zone</p>	<p>Occurs when an oceanic plate meets and sinks below a continental plate</p>	
<p>Trench</p>	<p>Long, narrow, deep depression in the ocean floor</p>	
<p>Folded Mountains</p>	<p>When rock layers are compressed and pushed upward</p>	



Directions: Read and ANNOTATE each question before you solve the problem.

Directions: Use the following words to fill in the blanks below.

asthenosphere

lithosphere

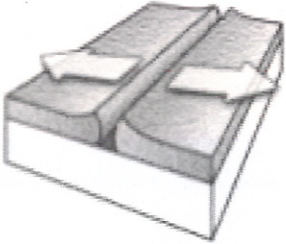
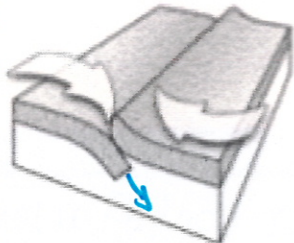
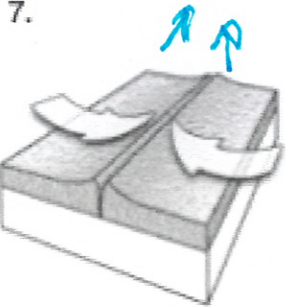
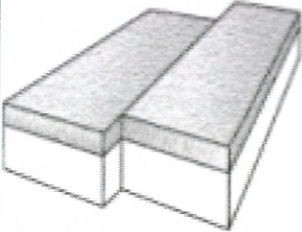
plate tectonics

convection

plates

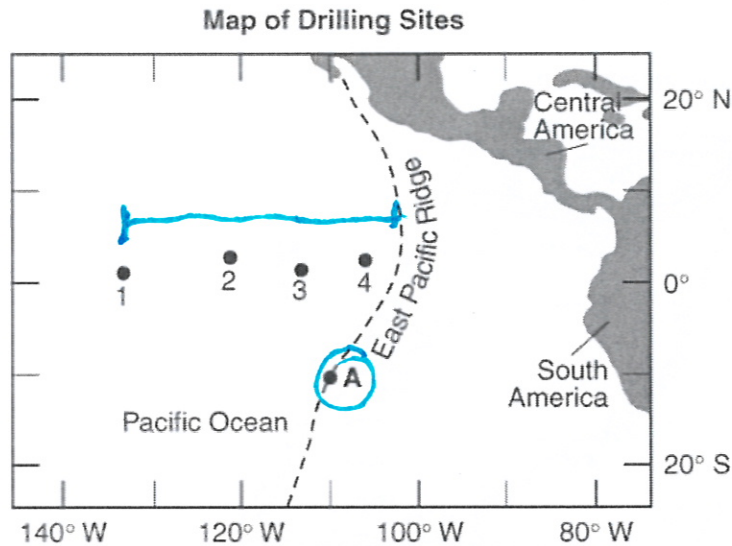
1. The theory of plate tectonics states that Earth's crust and upper mantle are broken into sections.
2. These sections, called plates, are composed of the crust and a part of the upper mantle.
3. The crust and upper mantle together are called the lithosphere.
4. Beneath this layer is the plasticlike asthenosphere.
5. Scientists suggest that differences in density cause hot, plasticlike rock to be forced upward toward the surface, cool, and sink. This cycle is called a convection current.

Directions: Four diagrams are shown in the table below. Label and describe each diagram in the space provided in order to complete the table.

Diagram	Type of boundary and motion at boundary	Diagram	Type of boundary and motion at boundary
6. 	Divergent	8. 	Convergent Subduction
7. 	Convergent	9. 	SKIP We'll cover this one tomorrow ☺

MIX IT UP

The map shows the locations of deep-sea core drilling sites numbered 1 through 4. The approximate location of the East Pacific Ridge is shown by a dashed line. Point A is located on the East Pacific Ridge.

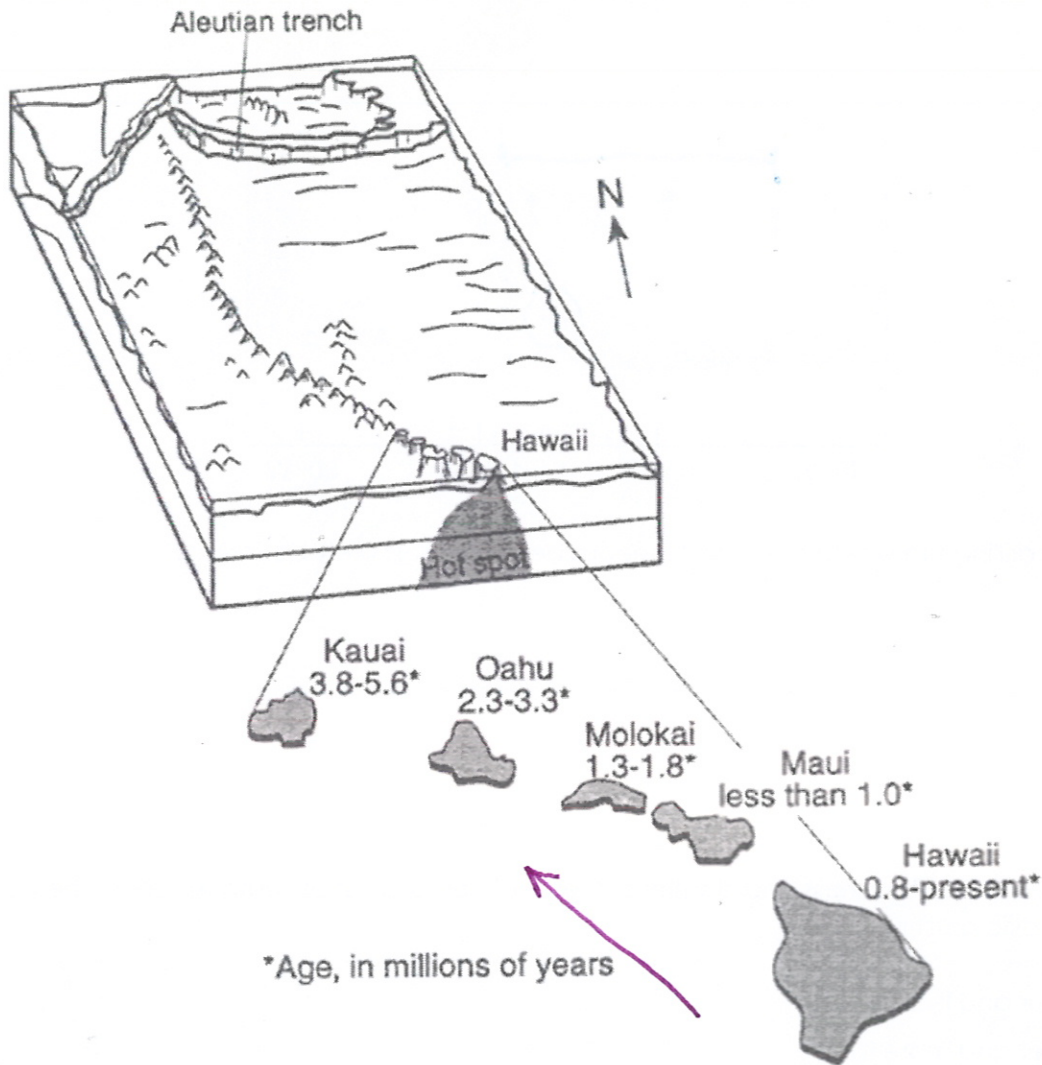


- At which drilling site would the oldest igneous bedrock most likely be found?
 - Site 1
 - Site 2
 - Site 3
 - Site 4
- Compared to the thickness and density of the continental crust of South America, the oceanic crust of the Pacific crust is
 - thinner and less dense
 - thinner and more dense
 - thicker and less dense
 - thicker and more dense
- The age of the cores at the drilling sites is evidence that at ridges, tectonic plates are
 - diverging
 - converging
 - locked in place
 - being subducted

BEAST MODE!

Read and ANNOTATE the given information before you solve the problem.

The block diagram below shows the bedrock age as measured by radioactive dating and the present location of part of the Hawaiian Island chain. These volcanic islands may have formed as the Pacific Plate moved over a mantle hot spot.



This diagram provides evidence that the Pacific Crustal Plate was moving toward the

- A. south
- B. east
- C. southwest
- D. northwest