

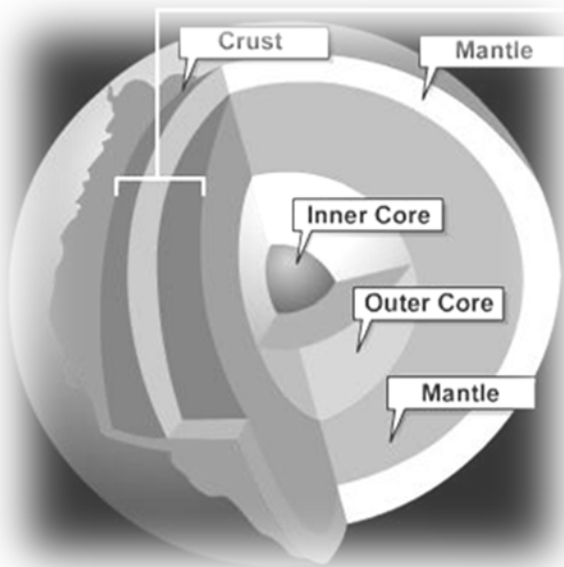
Physical Geology Lab

Name _____

Hour _____

Part ONE: Dynamic Earth

Earth's Structure



Name the Layer:

- _____ The only liquid layer
- _____ Only a few miles thick (under oceans)
- _____ Mostly solid iron and nickel
- _____ Made of hot, semi-solid rock
- _____ Semi-liquid zone in upper mantle
- _____ Made of crust and a bit of mantle
- _____ Thickest layer

Plate Tectonics

List 3 things that Alfred Wegener noticed that led to his theory of Continental Drift (which later developed into the theory of Plate Tectonics):

- _____
- _____
- _____

What was Pangea? _____

Describe the modern theory of Plate Tectonics

Continents Over Time


Teacher Check – (show your screen to your teacher)

Plates & Boundaries

Identify the 3 main types of plate boundaries:

A _____ Boundary ... two plates pushing towards each other. 

A _____ Boundary ... two plates moving apart from each other. 

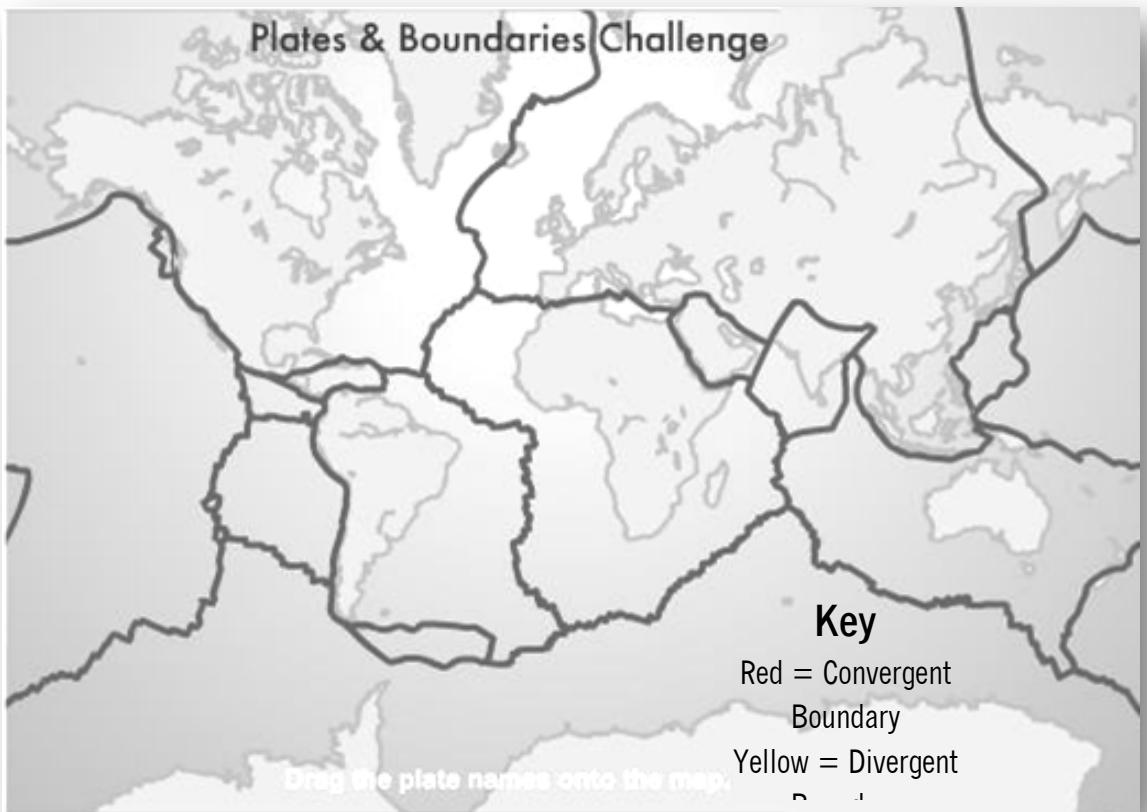
A _____ Boundary ... two plates slide past each other. 

On the Map:

Label the 15 Major Plates / Lightly color each plate a different color / Outline the plate boundaries by type (see the map key)

Plates & Boundaries Challenge

- African Plate
- Arabian Plate
- South American Plate
- Nazca Plate
- Pacific Plate
- Antarctic Plate
- Australian Plate
- Eurasian Plate
- North American Plate
- Caribbean Plate
- Scotia Plate
- Cocos Plate
- Indian Plate
- Juan de Fuca Plate
- Philippine Plate



Key
Red = Convergent Boundary
Yellow = Divergent Boundary

Drag the plate names onto the map.

Plates & Boundaries Challenge

Teacher Check – (show your screen to your teacher)

Slip, Slide, Collide

Convergent Boundary - crustal plates that collide



Convergent Boundary Word Bank

What happens:

- Older plate dives beneath younger plate
- Rock is crunched and folded
- Ocean plate dives beneath continental plate

What forms: list all that apply

- Mountain ranges
- Ocean Trenches
- Earthquakes
- Continental Volcanoes (volcanic arc)
- Island Volcanoes (island arc)
- Tsunamis

Divergent Boundary Word Bank

What happens:

- A valley-like rift develops
- Sea Floor spreads apart

What forms: list all that apply

- Mid Ocean Ridge
- Rift Valley
- Earthquakes
- Volcanoes
- Tsunamis
- New Lake or Ocean

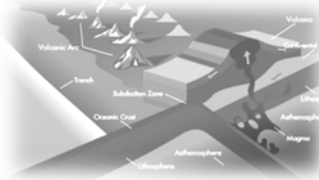
Transform Boundary Word Bank

What happens:

No clues available

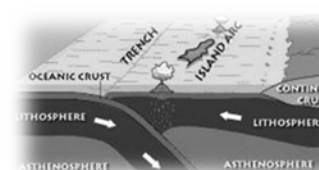
What forms:

No clues available



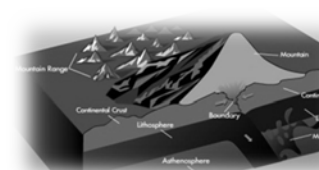
Ocean plate collides with Continental plate

- What happens:
- What forms:



Ocean plate collides with Ocean plate

- What happens:
- What forms:



Continental plate collides with Continental plate

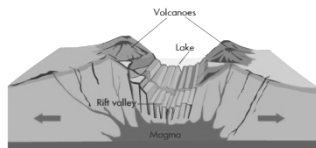
- What happens:
- What forms:

Divergent Boundary - crustal plates that spread



Two Ocean plates spreading apart

- What happens:
- What forms:



Two Continental plates spreading apart

- What happens:
- What forms:

Transform Boundary - two plates sliding past one another



- What happens:
- What forms:

Plate Interactions Challenge

Teacher Check

(show your screen to your teacher)

Test Skills

Teacher Check

(show your screen to your teacher)

Part TWO: interactive investigations

Continental Drift- put Pangea together and show it to your teacher before clicking "reset"



Teacher Check

(show your screen to your teacher)

Seismic Waves - how do seismic waves tell us the outer core is a liquid while the hotter inner core is a solid?



Earthquakes, Volcanoes, and Crustal Plates

Your conclusions:



Describing Earthquakes



What causes an Earthquake?

Label these parts on the diagram and write a definition for each:

- Fault -
- Plates -
- Epicenter -
- Focus -
- Seismic waves -

Earthquake Testing Zone

Run the simulator and observe the specific damage done by Earthquakes of different magnitudes. Fill in the chart below by writing the magnitude (number) of an earthquake that will result in the damaged described.

Magnitude	Damage Code	Damage Code	Description of Damage
_____	A	A	No damage; only picked up on seismograph.
_____	B	B	No damage; lamp in house swings.
_____	C	C	No damage; lamp swings and ground shakes.
_____	D	D	No damage; ground shakes and shutters rattle.
_____	E	E	Structural damage; buildings begin to crack.
_____	F	F	Structural damage; buildings crack, chimneys begin to break, trees break, shingles fall.
_____	H	G	Significant structural damage; chimneys topple off roof, lamp posts break.
_____	I	H	Total destruction of buildings; some natural gas lines rupture.
_____	J	I	Total destruction of buildings; all natural gas lines rupture.
_____		J	Total destruction of buildings; all gas lines rupture, car is tipped over.



