

Name: KEY

GEOLOGY UNIT

Blk: \_\_\_\_\_ Date: \_\_\_\_\_

Science 8

### UNIT IV GEOLOGY Key Terms

These are the vocabulary words that you should know for your final exam.

asthenosphere  
continental drift theory  
converging plates  
diverging plates  
earthquakes  
epicentre  
fault  
hot spot  
inner core  
lithosphere

mantle  
mantle convection  
outer core  
plate boundary  
plate tectonic theory  
primary waves  
ridge push  
slab pull  
rift valley  
secondary waves

spreading ridge  
subduction zone  
surface waves  
tectonic plates  
transform fault  
trench  
volcanic belt  
volcanic island arc  
volcanoes

### Key Concepts

These are the main ideas from this unit. Fill-in-the-blanks to complete.

#### Continental Drift Theory

- Various pieces of evidence indicate that the continents were once joined but later drifted to their current positions:
  1. The continental shelves of the continents can be aligned like a JIG SAW PUZZLE.
  2. Regions of some continents that are far apart have similar rocks, mountain ranges, and fossils. (coal deposits, climates)

#### Plate Tectonics Theory and Convection <sup>oil</sup>

- The process of SEA FLOOR SPREADING provides a mechanism for continental drift.
  1. The continents are attached to huge slabs of rock, known as TECTONIC PLATES

## Earth's Layers and Convection

- Earth has distinct LAYERS.
- When the tectonic plates move across Earth's surface, they carry the continents with them.

## Plate Interactions

- CONVECTION CURRENTS from the asthenosphere push magma to Earth's surface, causing tectonic plates to move and sometimes converge, or (COLLIDE) ~~CONVERGE~~ COME TOGETHER (DIVERGE or TRANSFORM)
- When tectonic plates converge, one plate may slide beneath the other or the edges of the plates may crumple, forming mountains.
- Tectonic plates can also DIVERGE, or spread apart, forming rifts on land and ridges in the oceans.

## Volcanoes and Earthquakes

- Tectonic plates may begin to slide past one another at a TRANSFORM boundary, resulting in the build-up of pressure, which may be released as an earthquake.
- Volcanoes occur at tectonic PLATE BOUNDARIES or over geologic HOT SPOTS, where magma is coming up through Earth's crust.

### MATCHING:

1. focus G

2. lithospheric plate F

3. epicentre C

4. subduction zone D

5. mantle convection E

6. spreading ridge A(B)

A. area where molten rock rises to Earth's surface

B. point on Earth's surface where two plates are forced apart

~~C.~~ point on Earth's surface directly above where an earthquake actually begins

~~D.~~ the result of one plate "diving" beneath another plate

~~E.~~ flowing currents of material that help move plates across Earth's surface

~~F.~~ portion of rock material that includes Earth's surface ~~G.~~ point inside Earth where an earthquake actually begins

### SHORT ANSWERS

7. (a) Explain why ocean rock increases in age the greater the distance away from an ocean spreading ridge.  
new rock forms on the "inside" pushing older rock to the "outside"

→ (b) Explain how magnetic stripes in ocean rock provide evidence for plate tectonics.

DON'T WORRY DIDN'T COVER

8. Compare and contrast the following.

(a) the ground motion of a P-wave and an S-wave

P-wave is like a slinky (compression wave)  
S-wave is like an ocean wave (transverse)

(b) a composite volcano with a rift eruption

composite volcano - violent eruptions / lava is thick  
rift eruption - less violent / lava is thin

9. Use the following diagram to answer question

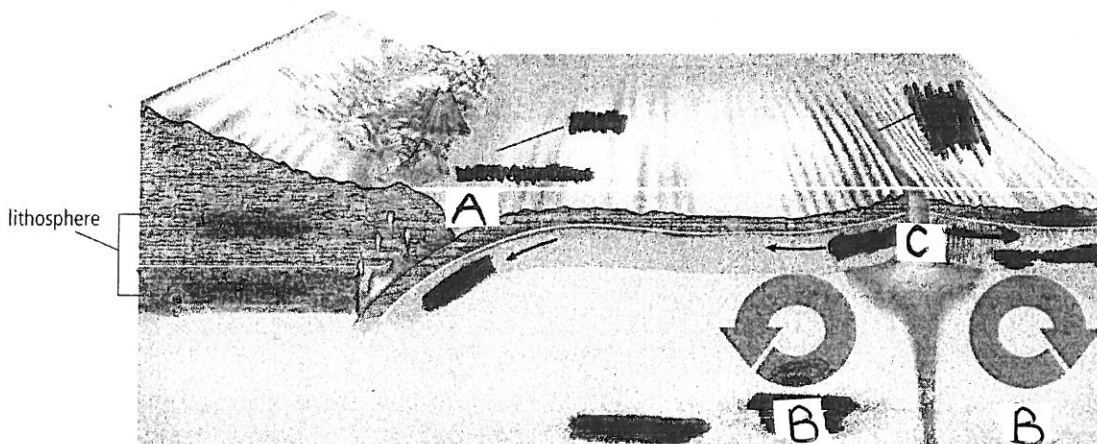


Figure 12.13 Thermal energy from inside Earth, gravity, and tectonic plate interactions affect the movement of tectonic plates.

For each **process** listed in the table, give the letter of the location shown on the diagram and a brief explanation of the process.

Process	Location	Explanation
(a) Convection	B	hot magma rises, cool magma drops
(b) Slab pull	A	denser oceanic crust "sinks" below continental crust
(c) Ridge push	C	new rock pushes old rock

10. Label the Layers of the Earth on the diagram below:

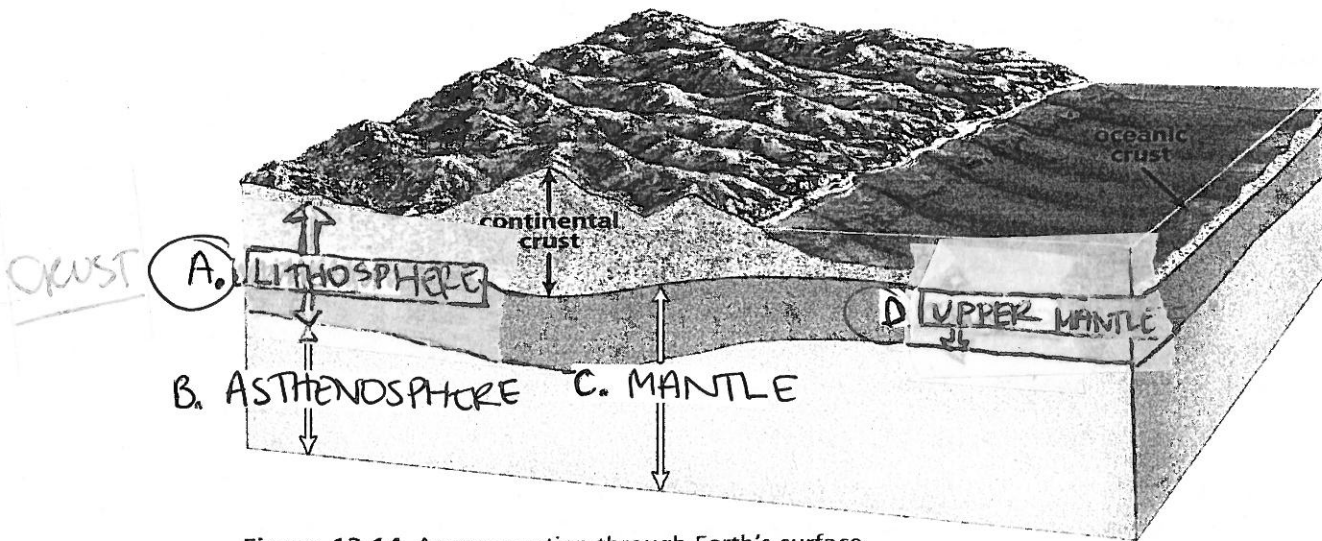


Figure 12.14 A cross-section through Earth's surface

11. Identify the types of waves in the diagram below:

