

Watch the video, [Exploring the Geosphere: Visions of Earth](#)

A. Staple your second set of definitions, the matching not the completion, to the back of this paper.

B. Pangaea Puzzle Activity - Complete your puzzle, have the Prof check, then answer these questions.

1. Five lines of evidence that support the theory of Pangaea include...

- A
- B
- C
- D
- E

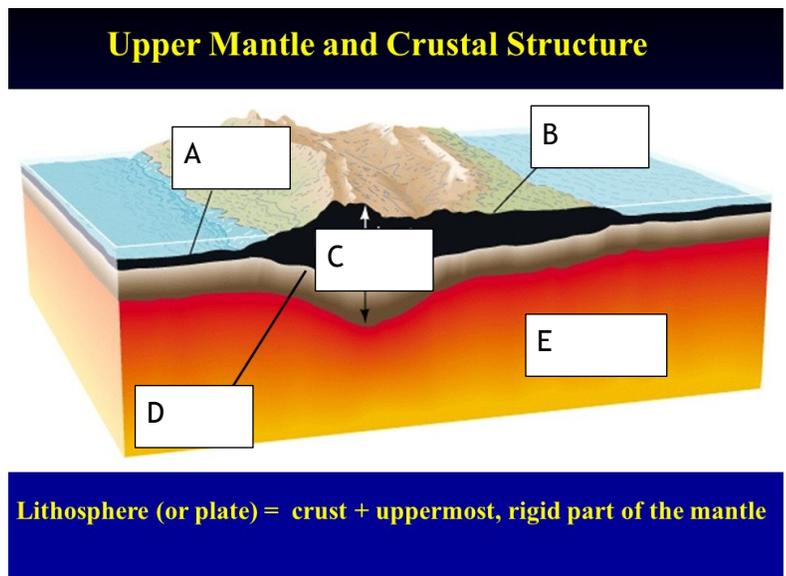
2. The scientist who developed the concept of moving continents and Pangaea was _____

3. What moves the lithospheric plates?

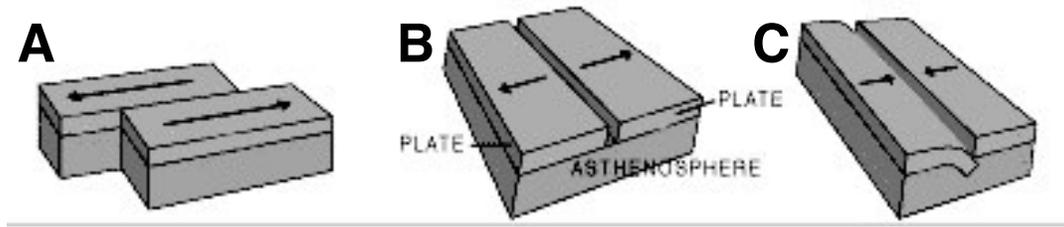
C. Match the items in the lithosphere and upper mantle models. [Plate Tectonics & Heat](#) may help.

Match A, B, C, D, and E with the terms below.

- 4. ____ oceanic crust, dense
- 5. ____ asthenosphere
- 6. ____ continental crust
- 7. ____ lithosphere, upper mantle and crust
- 8. ____ Moho



D. Types of Lithospheric Plate Boundaries (Link) Match description below with either A, B, or C.



9. ____ divergent boundary, occurs where plates are moving apart.
10. ____ convergent boundary, occurs where plates move toward each other.
11. ____ transform boundary, occurs where plates are sliding past each other.
12. ____ subduction, a process where one plate dives (subducts) beneath another plate.
13. ____ new lithospheric plate material is formed where the earth splits apart and magma rises to fill in the gap.

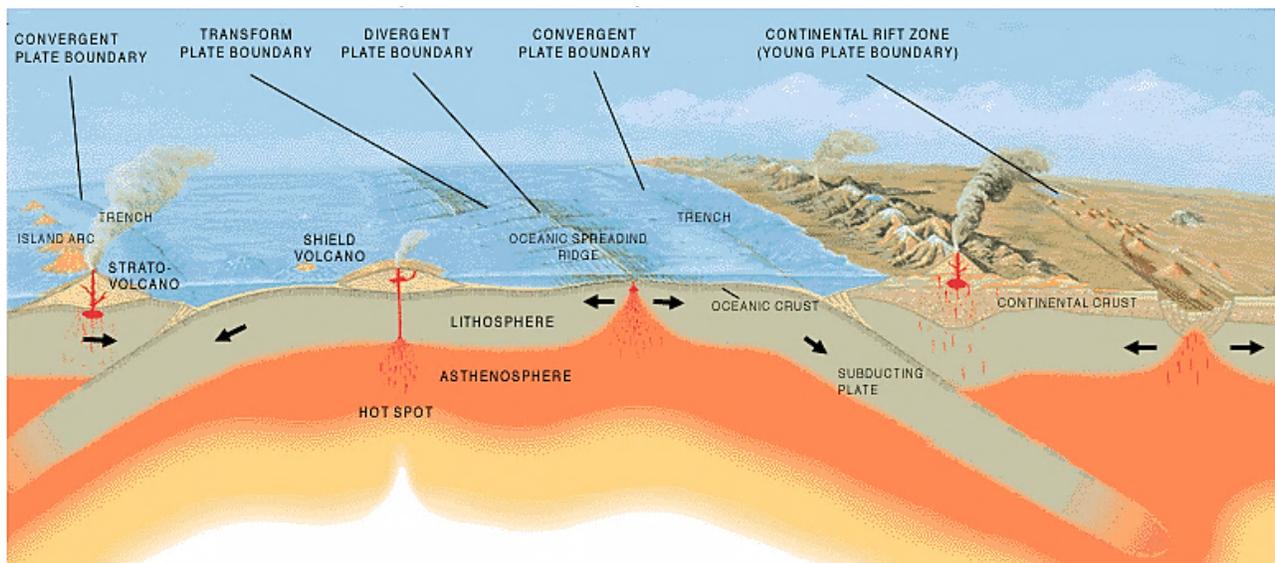
E. Use *The Dynamic Earth* to answer the following questions.

14. Find the border between the Nazca & South American plates. This is a _____ boundary.
15. Explain what is happening to each plate here.

16. Find the border between the Nazca & Cocos plates. This is a _____ boundary.
17. Explain what is happening to each plate here.

18. Find the northern border between the Caribbean & N. American plates. This is mostly a _____ boundary.
19. Explain what is happening to each plate here.

F. Use the large diagram below as a reference and circle the correct answer for each of the following:



20. A mid ocean ridge is a divergent / convergent / transform boundary. (Circle one.)
21. When ocean crust meets continental crust, the ocean / continental crust subducts.
22. A continental rift zone is a divergent / convergent / transform boundary.
23. A continental rift zone forms a volcanic arc or chain / rift valley that is volcanically active.
24. Island arcs, active subduction zone volcanoes, form from a divergent / convergent / transform boundary.
25. A trench occurs where a plate subducts beneath another at a divergent / convergent / transform boundary.

G. Use *The Dynamic Earth* to answer the following questions.

26. Type of plate boundary between the South Am. Plate & African Plate? (Circle one.)

diverging / converging / transform

Types of geologic activity occurring here. (Choose all that apply.)

subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

27. Type of plate boundary between the Philippine and Eurasian Plate? (Circle one.)

diverging / converging / transform

Types of geologic activity occurring here. (Choose all that apply.)

subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

28. Plate boundary between the Pacific Plate and California? (Circle one.)

diverging / converging / transform

Types of geologic activity occurring here. (Choose all that apply.)

subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

29. Type of plate boundary between the Pacific and Juan de Fuca plate? (Circle one.)

diverging / converging / transform

Types of geologic activity occurring here. (Choose all that apply.)

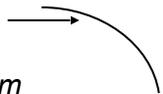
subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

30. Type of plate boundary between the Juan de Fuca plate and the US West Coast? (Circle one.)

diverging / converging / transform

Types of geologic activity occurring here. (Choose all that apply.)

subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

31. Type of plate boundary that curves around the Caribbean islands?  (Circle one.)

diverging / converging / transform

Types of geologic activity occurring here. (Choose all that apply.)

subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

32. What type of plate boundary is between the Arabian and Eurasian plates? (CIRCLE ONE)

diverging / converging / transform

Types of geologic activity occurring here. (Choose all that apply.)

subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

33. How would you describe the motion between the Arabian and African plate?

land masses are getting closer

the land masses are getting further apart

no change in the distance between them

34. Which of the following best describes what is occurring on Iceland?

half the island moves north, half the island moves south

the island is shrinking

the island is expanding east and west

35. Circle the two types of plate boundaries affecting New Zealand (SE of Australia).

diverging / converging / transform

36. Is Hawaii on a plate boundary? YES / NO. If so, which plate? _____

Types of geologic activity occurring here. (Choose all that apply.)

subduction / seafloor spreading / rifting / mountain building / transform motion / volcanic activity/ earthquakes

H. Complete the Sea Floor Ages Activity (Staple to this answer sheet.)

I. Rates of Motion in the Hawaiian Islands

37. Draw the three types of plate boundaries below. Name them. Use the concepts of heat flow via convection, density, and motion to explain what happens in each.

A

B

C