

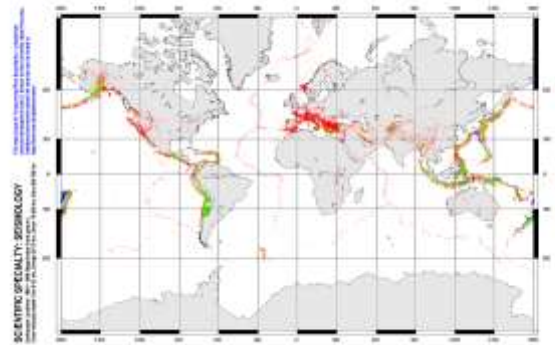
# Discovering Plate Boundaries

Modified from <http://plateboundary.rice.edu/>

**Plate Boundary Map:** Compare the plate boundaries on this map to the data in the following maps.

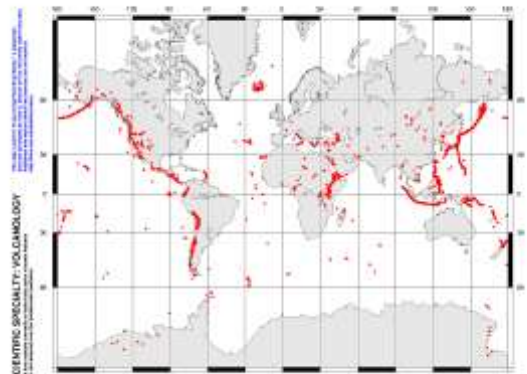
## Seismology Map:

1. What data is on this map?
2. What do the different colors mean?
  - a. Red –
  - b. Orange –
  - c. Green –
  - d. Blue –
3. What patterns do you see?
  - a. Shallow earthquakes are found:
  - b. Deep earthquakes are found:



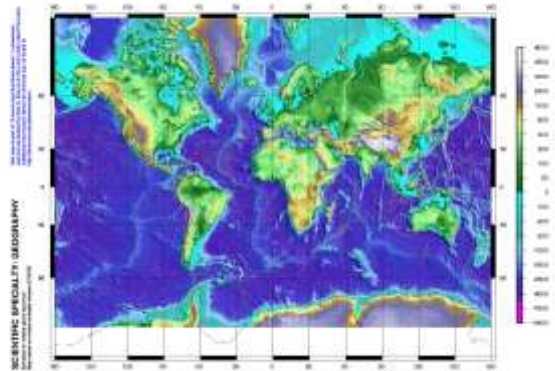
## Volcanology Map:

4. What data is on this map?
5. What do the different colors mean?
  - a. Red –
6. What patterns do you see?
  - a. Lines of volcanoes are found:
  - b. Random volcanoes are found:



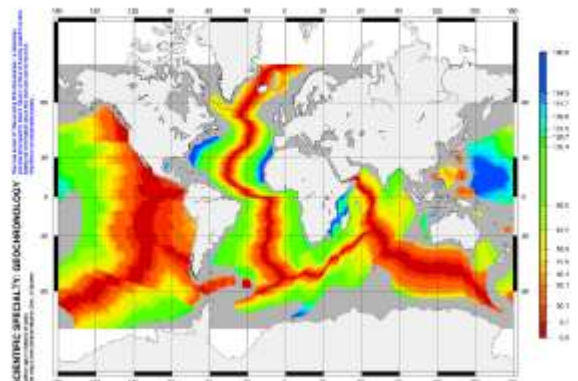
## Geography Map:

7. What data is on this map?
8. What do the different colors mean?
  - a. Orange –
  - b. Light blue –
  - c. Pink/purple –
9. What patterns do you see?
  - a. Mountains are found:
  - b. Island arcs are found:
  - c. Trenches are found:
  - d. In the middle of the ocean along the plate boundary it is:



## Geochronology Map:

10. What data is on this map?
11. What do the different colors mean?
  - a. Red –
  - b. Blue –
12. What patterns do you see?
  - a. New ocean floor (rock) is found:
  - b. Old ocean floor is found:
  - c. When the red is thicker that means:



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## Analysis Questions:

1. Look at the four maps at the same time. Which maps are VERY similar?
2. What are the commonalities with these maps? (This means you need to discuss (write) the data from each map and how they compare to each other. I should see words like earthquakes, volcanoes, mountains, trenches, shallow, deep, mid-ocean ridge, along the plate boundary, oceanic, continental, new/old sea floor, etc. \*\*\*Not all these words will be used; these are just some suggestions!) **Hint: Look at question # 5!**
3. What map(s) do you feel do not match at first with the others?
4. Look at it again and compare the maps. The map(s) you thought did not match actually **DO match!!!** So, how are ALL FOUR maps similar? EXPLAIN.
5. Look for PATTERNS between ALL the maps. List ALL the patterns below. **Compare earthquakes to volcanoes to mountains to trenches to the age of the sea floor!**

For example, I noticed that where the ocean is deep I also see heavy volcanic activity.

- Where the ocean is shallow, I see:
- Deep earthquakes are associated with:
- Island arcs are found where there are:
- Where the plate boundaries meet in the ocean I see:
- Where I see trenches I also see:
- The highest mountain range (C-C convergent boundary) also has: