

Discovering Plate Boundaries

Student Handout

Name: _____

Date: _____

Per: _____

You have been (or will be) assigned to one of four Scientific Specialties and to one of ten Plates or Plate Groupings.

The Scientific Specialties are:

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|---------------|------------------|
| A. Seismology | B. Volcanology |
| C. Geography | D. Geochronology |

The Plates or Plate Groupings are:

- | | |
|-------------------------|---------------------------------|
| 1. North American Plate | 2. Pacific Plate |
| 3. African Plate | 4. South American Plate |
| 5. Eurasian Plate | 6. Cocos/Nazca/Caribbean Plates |
| 7. Australian Plate | 8. Antarctic Plate |
| 9. Indian Plate | 10. Arabian Plate |

Each Scientific Specialty group has been provided a world map showing data relevant to locating plate boundaries and understanding plate boundary processes. Each student will be provided two Plate Boundary Maps. You will mark these as described below and turn them in at the end of the exercise. There are a number of colored pencils available in the room for your use.

Period 1: Assemble in your Scientific Specialty groups with your group's map. Record relevant information in your Interactive Note Book page .

Task 1 Look at your group's map and talk about what you see. What you look for will vary with data type. For the point data (volcanoes and earthquakes) you are looking for distribution patterns. For surface data (topography and seafloor age) you are looking for where the surface is high and where it is low, where it is old and where it is young. Work as a group. Let everyone talk about what they see. During this period concentrate on the whole world

Task 2 Now focus your attention on the plate boundaries. Identify the nature of your data near the plate boundaries. Is it high or low, symmetric or asymmetric, missing or not missing, varying along the boundary or constant along the boundary , and etc. As a group, classify the plate boundaries based on your observations of your group's data. Restrict yourselves to about 4-5 boundary types. At this point, do not try to explain the data; just observe!

Task 3 Assign a colored pencil color to each boundary type in your classification scheme. Color your first Plate Boundary Map to locate your group's boundary types. If the data are asymmetric at a particular boundary type, devise a way of indicating that on your plate boundary map. Each person should mark the boundary types identified by the group on their own map. Each person should write down descriptions of the group's plate boundary classifications on the back of their map. These maps and descriptions will be turned in at the end of the exercise.

Task 4: Create 3 questions that when answered will help others to understand your map and the related Earth Science material.

Task 5: Prepare to present your information next class