

Investigating the Earth's crustal plates by studying earthquakes and volcanoes.**INTRODUCTION:**

The data below represent worldwide earthquake and volcano locations given by their latitude and longitude. The goal of this investigation is to map the locations of these tectonic events to see what relationships can be deduced.

MATERIALS: world map
colored pencils (2)

PROCEDURES:

Using a world map and two different color pencils, plot the location of each earthquake in one color and each volcano in the other color.

DATA:

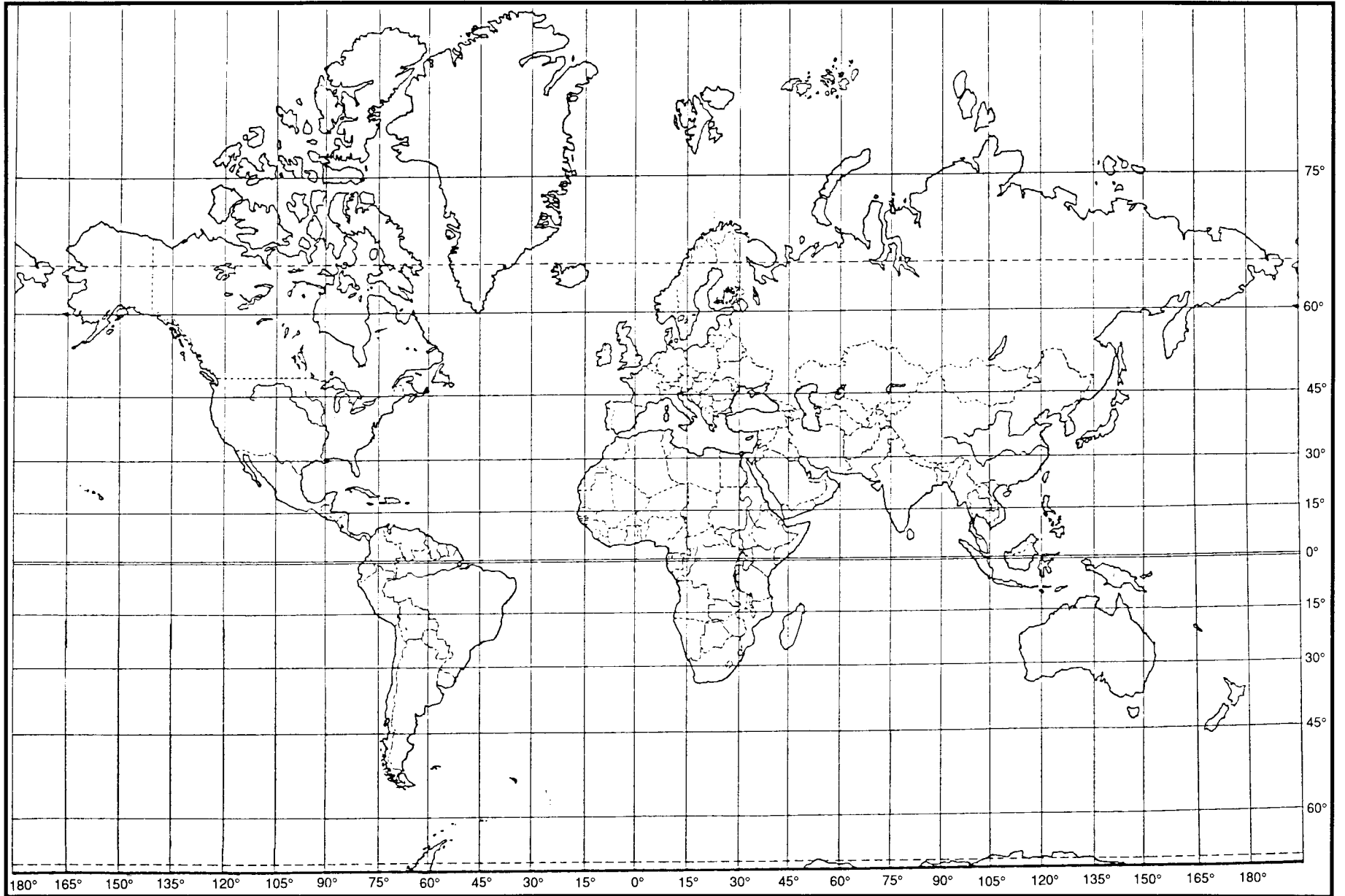
| <i>EARTHQUAKES</i> | | <i>VOLCANOES</i> | |
|---------------------------|------------------------|-------------------------|------------------------|
| ^o Latitude | ^o Longitude | ^o Latitude | ^o Longitude |
| 40N | 120W | 60N | 150W |
| 5S | 110E | 35S | 70W |
| 4S | 77W | 45N | 120W |
| 23N | 88E | 15N | 61W |
| 14S | 121E | 20N | 105W |
| 7N | 34E | 0 | 75W |
| 44N | 74W | 40N | 122W |
| 30S | 70W | 40N | 30E |
| 45N | 10E | 30N | 60E |
| 13N | 85W | 55N | 160E |
| 23N | 125E | 3S | 37E |
| 35N | 30E | 40N | 145E |
| 35N | 140E | 10S | 120E |
| 46N | 12E | 41N | 14E |
| 28N | 75E | 5S | 105E |
| 61N | 150W | 15N | 35E |
| 47S | 68W | 30S | 70W |

ANALYSIS:

1. Discuss the distribution of earthquakes and volcanoes over the surface of the Earth. Are they scattered at random or are they concentrated in zones? Describe your observations.
2. Discuss the distribution earthquakes and volcanoes located in relation to the continents. Are they near the middle of continents or....? Describe.
3. Using reference books or maps, draw the major crustal plates of the Earth on your world map. Label the names of the plates neatly.
4. Discuss the distribution of earthquakes and volcanoes in relation to the crustal plates. Are they scattered all over the plates or is there a pattern? Describe.
5. Add arrows to your map showing the direction of crustal plate movement.
6. Is there a relationship between the direction of movement and distribution of earthquakes? volcanoes? both? neither? Describe and explain.

Name _____ Period _____

MAP OF WORLD EARTHQUAKES & VOLCANOES



TEACHER'S GUIDE:

