

# Locating Earthquakes and Volcanoes on Planet Earth

Objectives:

- Students will plot the locations of Earthquakes and Volcanoes on a world map.
- Students will review longitude and latitude
- Students will observe patterns of EQ and volcano locations and see that most of them lie along plate boundaries.

## Plotting Activity

1. Students are given a blank world map. This map should preferably be Pacific-centered so the outlines of the “Ring of Fire” are clearly visible. This map needs to have latitude and longitude lines marked. Students are also given the “List of Earthquakes and Volcanoes by Location”
2. If needed, review with the students how to plot points on a map using Latitude and Longitude lines.
3. Have the students work individually to plot all the points on their map. Have them plot each Earthquake as an “X” and each Volcanoes as an “O”.
4. Discuss their observations – students will invariably notice that most of the earthquakes and volcanoes fall along the same lines – these are, of course, the plate boundaries. Some of the earthquakes and volcanoes occur outside of the plate boundaries, and this will lead to a discussion about the fact that earthquakes can happen along any fault (such as the massive New Madrid earthquake) and that volcanoes can occur at “hot spots” (such as Hawaii).

## List of Earthquakes and Volcanoes by Latitude and Longitude

Older Earthquakes		Recent Earthquakes		Volcanoes	
Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
77 N	0 W	42 N	144 E	17 N	62 W
20 N	40 W	46 N	143 E	33 N	131 E
55 S	40 W	84 N	4 W	8 S	123 E
35 N	30 W	22 S	175 W	21 S	56 E
10 N	45 E	22 S	113 W	8 S	113 E
15 N	55 W	59 S	26 W	5 S	151 E
45 N	125 W	35 N	36 W	3 N	125 E
30 S	75 W	18 N	120 E	19 N	99 W
15 N	120 E	37 N	121 W	20 N	104 W
50 S	160 E	17 N	94 W	10 N	123 E
30 N	45 E	26 S	69 W	15 N	91 W
5 S	120 E	20 N	96 E	14 N	91 W
60 N	29 W	1 N	126 E	2 N	128 E
0 N	20 W	35 N	135 E	1 S	78 W
40 S	90 W	23 S	179 W	16 N	146 E
35 N	0 W	1 S	69 E	50 N	155 E
10 S	70 E	35 N	102 W	4 S	152 E
15 N	75 W	7 S	128 E	0 S	78 W
20 N	105 W	5 S	154 E	56 N	161 E
60 N	180 E	40 N	38 E	19 N	155 W
10 S	135 E	48 N	149 E	56 N	161 E
50 S	110 E	39 N	112 W	2 S	29 E
30 N	75 E	38 S	178 E	39 N	15 E
45 N	40 W	39 S	174 E	38 N	15 E
30 S	20 W	51 N	177 E	9 S	123 E
45 S	135 W	45 S	167 E	54 N	160 E
30 N	30 E	12 N	144 E	4 S	145 E
50 N	170 W	5 S	154 E	39 S	72 W
5 N	75 W	80 N	2 W	36 N	139 E
45 N	130 E	48 N	117 W	0 S	79 W
30 S	165 E	11 S	165 E	20 N	156 W
20 S	75 E	20 N	71 W	33 N	140 E
55 N	150 E	42 N	144 E	56 N	160 W

36N 89W (New Madrid Missouri February 7, 1812 M8.0)

118N 34W (Northridge, CA January 17, 1994 M6.7)

37N 121W (Loma Prieta, CA - South of San Francisco October 17, 1989 M6.9)

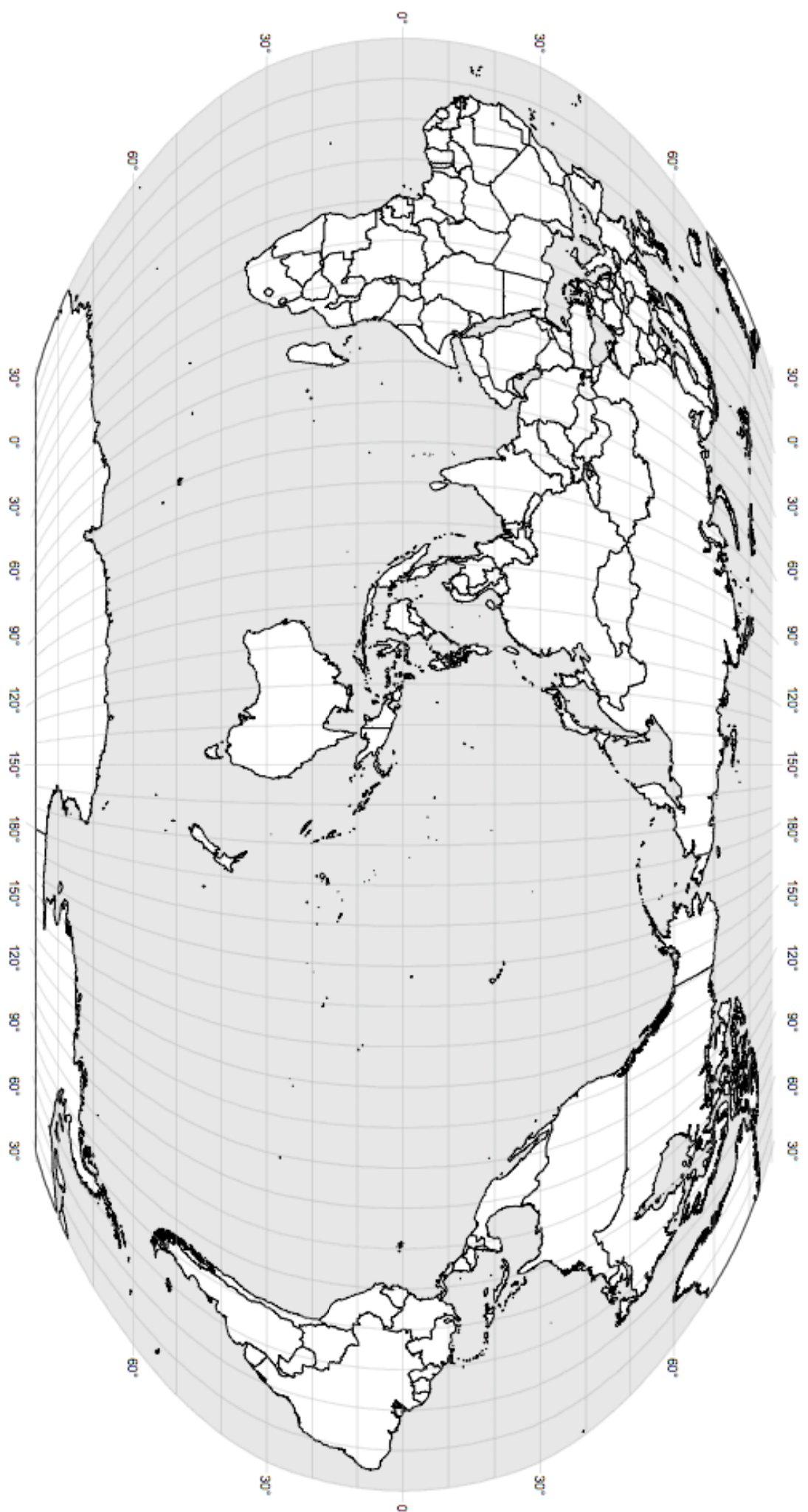
3N 95E (Sumatra Earthquake and Tsunami December 26, 2004 M9.3)

46N 122W (Mount Saint Helens – last erupted May 1980)

15N 120E (Mount Pinatubo – last erupted in June 1991)

4N 75W (Nevado del Ruiz, Chile – last erupted September 1985 destroying the village of Armero)

22N 159W (Kilauea, Hawaii – currently active)



Robinson Projection



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