

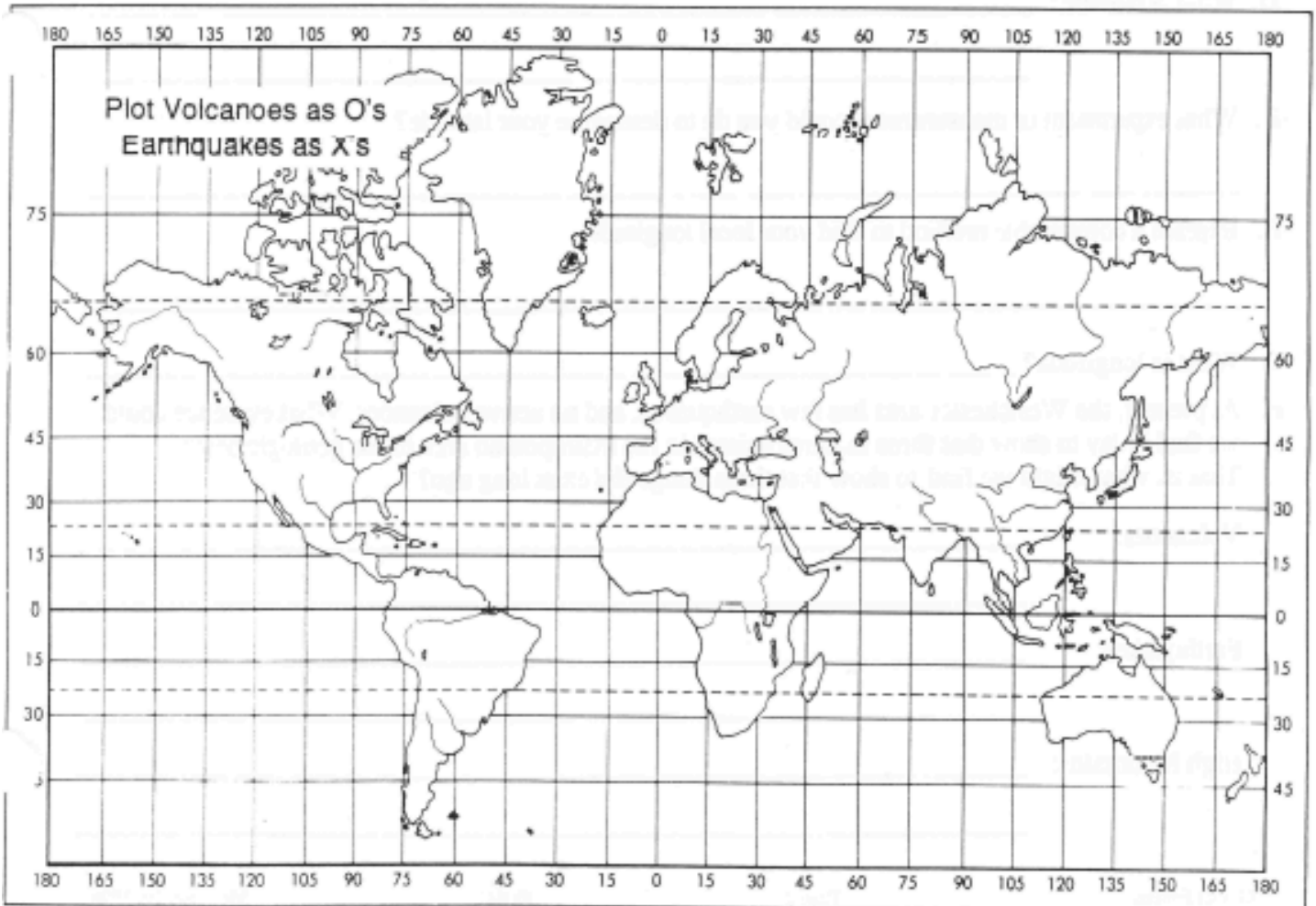
Global Patterns

We can move closer to an understanding of the dynamics of the Earth's crust by looking at the geographic distribution of crustal activity.



Above: Major Mountain Chains of the World ↑

Below: Mercator Projection Map of the World ↓



Materials: Locations of earthquakes epicenters and active volcanoes

Procedure:

1. Plot the locations of 10 active volcanoes on the map on page 1. For each volcano, make an “O” on the upper map at the proper coordinates. If possible, each group should work from a different part of the list. (Do not label them with their names. The names are not needed.)
2. Carefully write your O’s in chalk on the map project on the blackboard.
3. If there is time, repeat this procedure for another 10 volcanoes.
4. Use an earthquake data booklet to plot 10 earthquake epicenters on the same map, each as an X. Then mark them on the blackboard as you did the volcanoes.

http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/quakes_all.html

Active Volcanoes of the World

Plot them as O’s

Volcano		Latitude	Longitude	Volcano		Latitude	Longitude
Mt Rainer	USA	47° N	122° W	Reventador	Ecuador	0°	78° W
Vesuvius	Italy	41° N	14° E	Seroea	Indonesia	6° S	130° E
Tambora	Indonesia	8.2° S	118° E	Erebus	Antarctica	78° S	168° E
Poas	Costa Rica	10° N	84° W	Ubinas	Peru	16° S	71° W
Saishuto	Japan	33° N	127° E	Tinakula	Melanesia	10° S	166° E
Lokon	Indonesia	1° N	125° E	Maikan	Indonesia	0°	127° E
Hunter Island	Melanesia	23° S	172° E	Late Island	Melanesia	19° S	175° E
Katmai	Alaska	58° N	155° W	Brimstone Island	New Zealand	30° S	179° E
Barren Island	Thailand	12° N	94° E	Mayon	Philippines	13° N	124° E
Niragongo	Congo	2° S	29° E	Pagan Island	Micronesia	18° N	146° E
Chyulu Hills	Kenya	3° S	31° E	Karthala	Comoros	12° S	43° E
Mauna Loa	Hawaii	20° N	156° W	Beerenberg	Iceland	71° N	8° W
Erta-Ale	Ethiopia	14° N	41° E	Sao Jorge	Azores	39° N	28° W
Katla	Iceland	64° N	19° W	Maipo	Chile	34° S	70° W
Mt. Burney	Chile	52° S	73° W	Paricutin	Mexico	20° N	102° W
Kanaga	Alaska	52° N	177° W	Mt. Lassen	USA	41° N	121° W
Tres Virgines	Mexico	28° N	113° W	Lanzarote Island	Canary Islands	29° N	13.7° W
Penetubo	Japan	34° N	134° E	Krakatau	Indonesia	6° S	105° E
Etna	Italy	38° N	15° E	Egremont	New Zealand	39° S	178° E
Mt. St. Helens	USA	45° N	122° W				

Conclusion Questions:

1. How do the zones of frequent earthquake activity compare with the region of active volcanoes?

2. How do the locations of mountain regions compare with the earthquake and volcano zones?_____

3. What ocean is surrounded by a ring of crustal activity?_____

4. What is latitude?

5. What is longitude?

6. What evidence could we find today to show that the following features existed in Alameda County in the geologic past? That is, what might we find to show that these things did exist long ago?

Volcanoes:

Earthquakes:

High Mountains:
