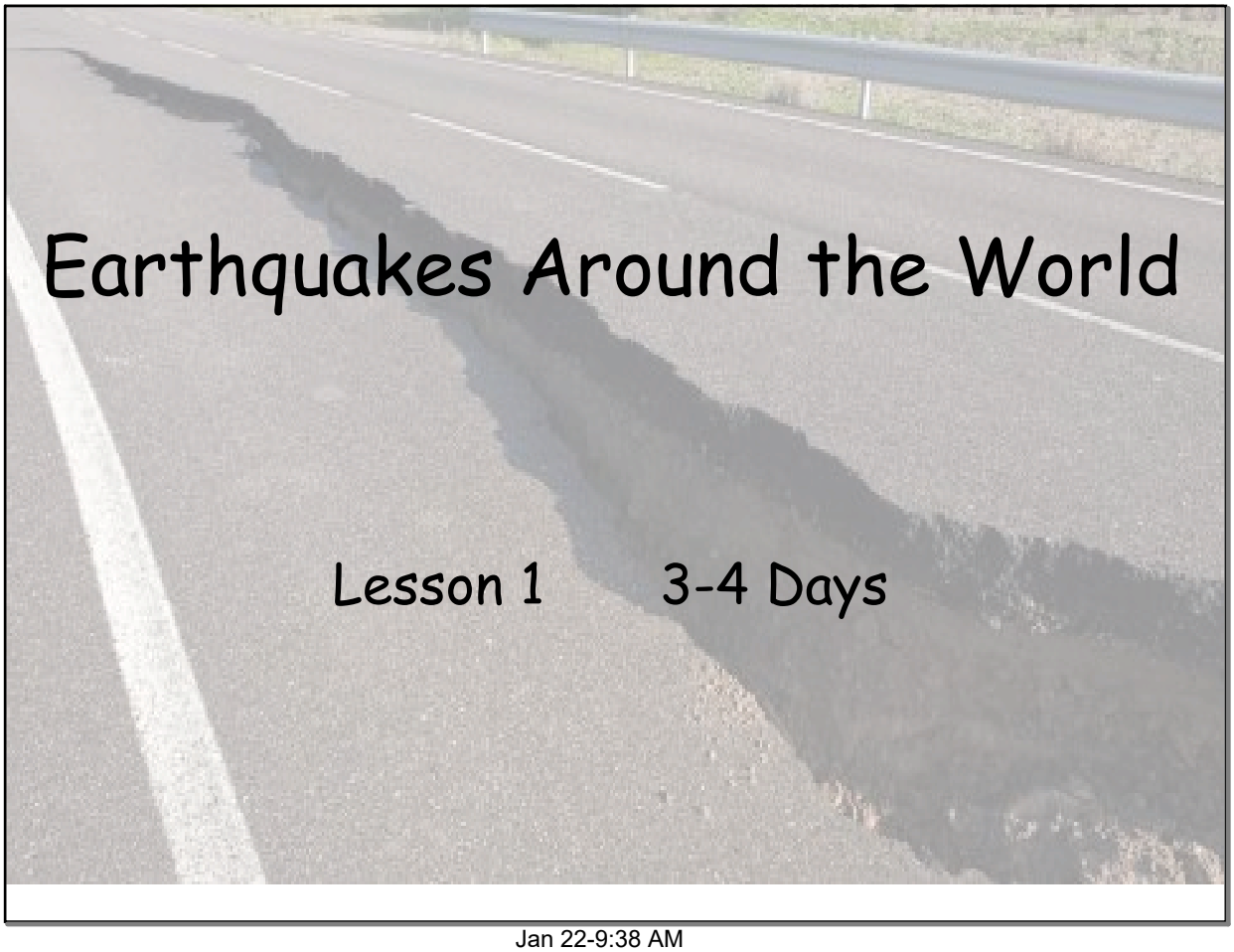


Jan 22-9:38 AM

Objectives

- Use real data to establish the locations where most earthquakes take place.
- Recognize early understandings of how earthquakes occur.

Key Questions

- Where do most earthquakes occur on Earth?
- How do earthquakes occur?

Jan 22-11:33 AM

Materials Needed

For each student
- 1 student page

For the class
- World Map
- Tectonic Plates Map

For each group of 4
- 20 beaded pins
- handout: *Mapping Earthquakes*

Teacher Provides
- Internet access
- Earthquake data from USGS website
- Computer
- Colored pencils

Jan 22-11:59 AM

What We Think About Earthquakes

- Where do you think earthquakes occur most often in the world?
- On the map, show me some locations where you think earthquakes happen.
- Why do earthquakes occur and what makes some areas more prone to earthquakes than other areas?
- How many earthquakes do you think occur on Earth each year?

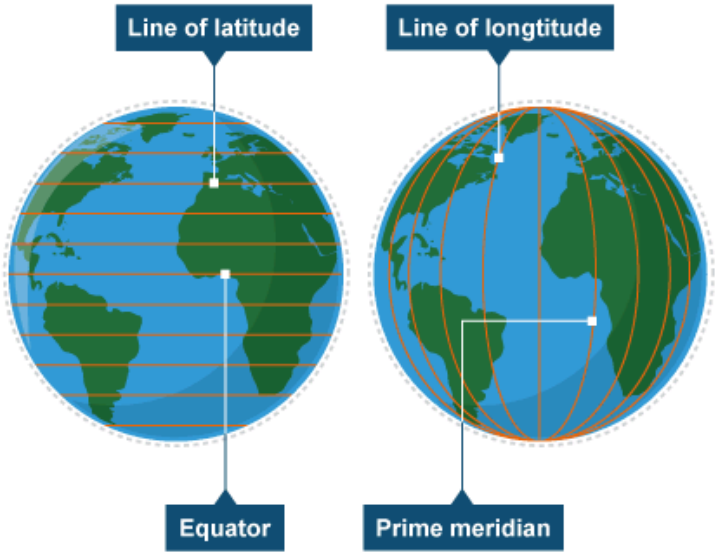
Jan 22-2:34 PM

- Look at the world map, who can identify the continents and major bodies of water?

- Looking at the western hemisphere, what can you share about the different regions you have been exploring in your social studies class?

Jan 22-2:58 PM

What are lines of longitude and latitude and how do they help us find locations on the Earth?



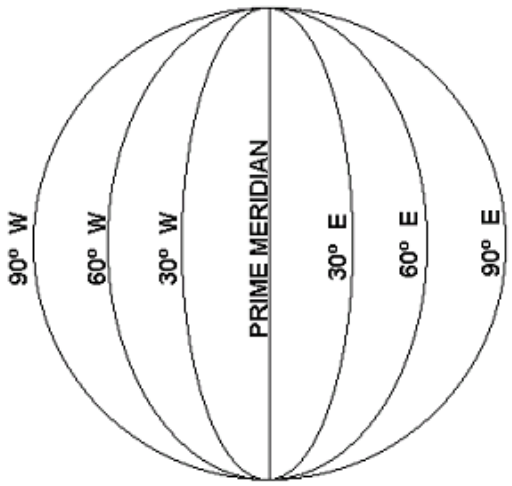
Jan 22-3:21 PM

Michigan's Lines of Longitude and Latitude

Jan 22-3:35 PM

Lines of Longitude

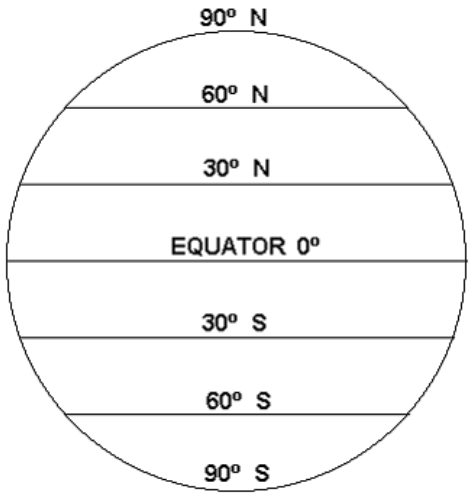
Longitude lines (shown as a vertical line) determines direction east and west and is measured with respect to the prime meridian in Greenwich, England.



Jan 23-3:13 PM

Lines of Latitude

Latitude lines (shown as a horizontal line) determine north and south angular distances from the equator.



Jan 23-3:19 PM

Algonac/Coordinates

42.6217° N, 82.5336° W

Jan 23-3:28 PM

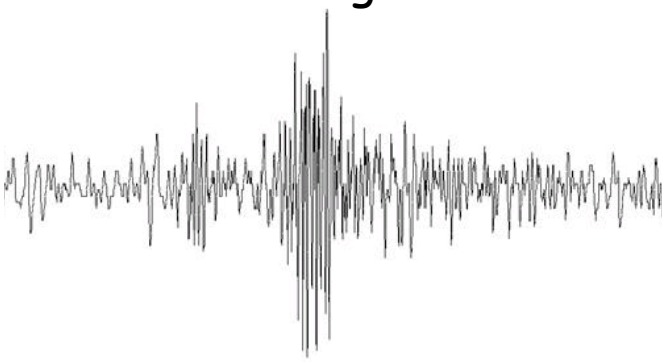
Recent Earthquakes

Magnitude	Date/Time	Degrees Latitude	Degrees Longitude	Region
2.5	1-13-2018 11:56 pm	17.952°N	65.338°W	Esperanza, Puerto Rico
2.5	1-13-2018 8:44 pm	35.665°N	97.399°W	Edmond, Oklahoma
4.1	1-13-2018 8:08 pm	16.613°N	100.892°W	Tecpan de Geleana, Mexico

Jan 23-3:31 PM

Magnitude

Magnitude is the amount of energy released by an earthquake. Magnitude relates to the strength of an earthquake.



Jan 23-3:46 PM

Plotting Earthquakes

Now it's your turn to practice plotting earthquakes!

- Each group will get a set of data.
- Use the longitude and latitude to find the **approximate** location of the earthquake from your data list. (Don't worry about getting your whole list plotted.)
- If the magnitude is 7.0 or higher you will put a red dot on your map.
- If the magnitude is between 5.0 and 6.9 you will put a blue dot.
- If the magnitude is between 3.0 and 4.9 you will put a green dot.
- If the magnitude is 2.9 or lower put a black dot.

Jan 22-2:54 PM

Class Map

Each group can choose one of their earthquakes to plot on our class map.

You will use a colored push pin that matches the color on your map.

By the time each class plots their earthquakes we will have a full map!

Are any of the pins located in one concentrated area?

Jan 23-4:36 PM

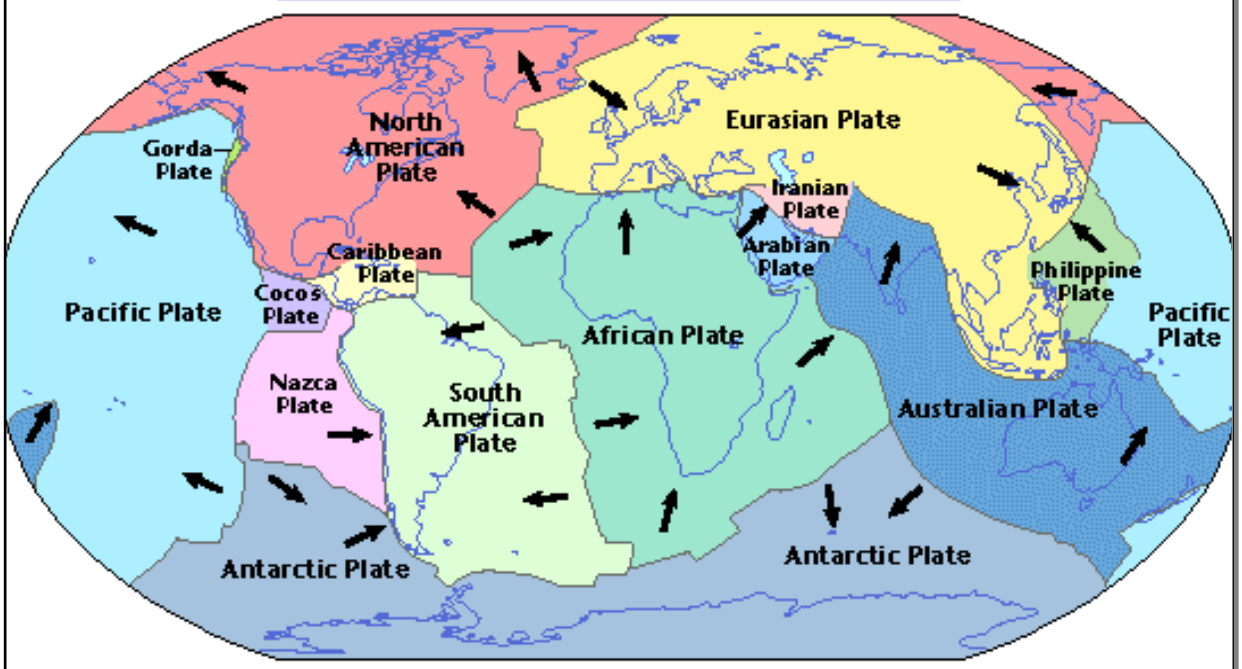
This was just some of the data from the last 30 days.

- Can you imagine how many earthquakes there are in a year?
- Why are some areas of the world more prone to earthquakes than others?

Jan 23-4:41 PM

(Hang up map)

Earth's Tectonic Plates



Jan 23-4:44 PM

- Compare the boundaries of the plates and the areas where most of the earthquakes occurred.
- What is the relationship between the area of the earthquakes and the tectonic plate boundaries?

Jan 25-8:51 AM

Journal Entry

1. By plotting earthquakes that occurred over 1 year on the map, I learned:

2. I still have questions about:

Jan 27-7:36 AM

Glue definitions in notebook and draw a picture for each definition

earthquake - An earthquake is the shaking or trembling of the Earth due to the movement of tectonic plates.

latitude - Latitude determines north and south angular distance from the equator.

longitude - Longitude determines direction east and west and is measured in respect to the prime meridian.

magnitude - Magnitude is the amount of energy released by an earthquake. Magnitude relates to the strength of an earthquake.

Jan 27-7:39 AM

Jan 14-8:12 AM