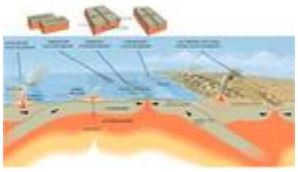

Plates, Quakes and Lava

Original Activity can be found at http://sciencelearn.org.nz/Contexts/Earthquakes/Teaching-and-Learning-Approaches/Plates-and-quakes

In this activity, students take on the roles of seismologists, volcanologists and geographers, using maps to look for patterns in the worldwide distribution of earthquakes, volcanoes and topographic features. By the end of this activity, students should:

- understand that some locations have so many earthquakes and volcanoes and others do not
- be able to relate their findings to the positions of tectonic plates and their boundaries
- understand that specialists collaborate to provide evidence to support their ideas.

You will be in groups of 4:

- Your group has been given a continent or location _____
- Each group member will have a role, please assign them:
  - Volcanologist _____
  - Seismologist _____
  - Geographer _____
  - Specialist _____
- Your group will have 40 minutes to compile all of their own parts.
  - Specialists will need some data from the other 3 group members to complete their part, So work quick!

Volcanologists:

- You will need to design or find a ** Free ** design of the anatomy of a volcano.
- You need statistics about volcanoes:
  - How much damage do they cause?
  - What are the costs?
  - What is the time frame to rebuild afterwards?
  - What type of plate boundary is responsible on your continent for these volcanoes?
  - How many typically erupt in say a decade, or century or a specified time frame?
  - Are there factors that can be used to predict them, what are they?

Seismologists:

- You will need to design or find a ** Free ** design of the anatomy of an earthquake.
- You need statistics about earthquakes:
  - How much damage do they cause?
  - What are the costs?
  - What is the time frame to rebuild afterwards? (about)
  - What type of plate boundary is responsible on your continent for these earthquakes?

- How many typically occur in say a decade, or century or a specified time frame?
- Are there factors that can be used to predict them, what are they?

Geographers:

- You will need to find the closest topographic map of your region where volcanoes and earthquakes occur. (I realize this will take the most of your time)
- You need to show if your topography has something to do with how your plate boundaries react or create the "perfect environment" for volcanoes and earthquakes.

Specialists:

- You need to answer the following (use your map to help you):
  - Where on the plates is the highest land typically found?
  - Where do the most earthquakes and volcanoes occur?
  - What plate boundary would have more earthquakes than volcanoes? Why?
  - Which plate boundary has more volcanoes than earthquakes? Why?
  - Is there a relationship between the distribution of earthquakes, volcanoes and elevation?
  - What might cause the patterns they you observed?
  - Based on the information above, how does this affect your group's given location?

<u>At the end of 40 minutes, your group will need to create a Piktograph, info graphic to showcase your information.</u>

- The piktograph must include:
  - Statistics about earthquakes AND Volcanoes (you can chose the topic for your statistics: damage, deadliest, costliest, etc)
  - Pictures to show an example of each; earthquake and volcano (chose one location for the picture, be sure to note its location)
  - Type of plate boundary that is responsible for this action.
  - Number of earthquakes in a specified time frame (you choose the time frame of years for your data)
  - Number of volcanoes earthquakes in a specified time frame (you choose the time frame of years for your data)
  - Any additional information or facts you found while doing your research.

Be leery of using only Wikipedia.

Try to stick with sights that you know can be trusted (examples): Encyclopedias online (Encarta, World Book, etc), USGS, etc

** You will need to share your infographic and your research with me prior to exiting the class!! **