Earthquakes: Epicenter and Aftershocks

Google Maps Mini Project
Lauren Zaccaria
Target Audience

- Middle School Science students, Grades 6-8
- Prior knowledge/lessons of Earth’s layers and plate tectonics
- Prior knowledge/lessons of Google Maps
Lesson Goals, Objectives, and Outcomes

● Students will be able to:
  ○ Identify science vocabulary: earthquake, epicenter, aftershock, magnitude, Richter Scale
  ○ Research a famous earthquake and its aftershocks (location, magnitude, damage, deaths, reconstruction)
  ○ Locate and label a map to show the earthquake’s epicenter and subsequent aftershocks
  ○ Make connections to plate tectonics and identify plate motion

● Lesson Outcome:
  ○ Students will create a slideshow about their assigned earthquake
  ○ Students will create a map using Google Maps to pinpoint the location of the earthquake’s epicenter and its subsequent aftershocks.
  ○ Students will incorporate knowledge of plate tectonics while presenting earthquake slideshows and maps to their peers.
Next Generation Science Standards

- MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.
Lesson Procedure and Timeline

- This project will occur during a Plate Tectonics unit
- Students will already know about the 4 main Earth’s Systems (geosphere, atmosphere, biosphere, and hydrosphere), theory of plate tectonics, and earthquake basics.
- Students will be assigned a partner and a famous earthquake to research and map out.
- Students will complete a graphic organizer and slideshow presentation about their assigned earthquake.
- They must include a map of the location of the earthquake that includes the epicenter of the quake and a layer to map any aftershocks.
Map Link

https://drive.google.com/open?id=1Yyt8UU9ZCjIxXrNKmXAF6qS4PHc&usp=sharing
Brainy Bits

- Students will utilize various parts of the brain including:
  - The Cerebrum - this project provides multi-sensory activities with visual and tactile stimuli
  - Temporal Lobe/Short-Term and Long-Term Memories - they may have been in an earthquake before, have seen them on the news, or know a family member or friend who has lived through one
  - Frontal Lobe - used for higher level cognitive thinking so that students can connect earthquakes and their locations to tectonic plate movements
  - Occipital Lobe - students must interpret visual stimuli and information via creating a map of the earthquake and its aftershocks
Pedagogy Piece

- **Multiple Intelligences**
  - Visual and Spatial - students will create a slideshow of research and a Google Map to show locations of a famous earthquake and its aftershocks
  - Interpersonal - students will work with a partner to complete this project
  - Linguistic - students must use language to communicate with their partner and present their work to the class
  - Logical and Mathematical - students must understand and use map skills to plot where earthquakes and their aftershocks have occurred and correlate that to tectonic plate movement


My personal notes from Evelyn’s Brainy Bits sessions