**Investigation: What caused the eruptions in Hawaii?**

**This activity will begin to address the following Essential Question:**

*What causes volcanos?*

1. Watch the video [Volcano Explosion!](https://www.youtube.com/watch?v=plDrSjw4z5U) . As you watch, complete the following sentence starters in your notebook:

* I notice…
* It reminds me of…
* I wonder…
* Could it be…?

1. Underneath, you are going to diagram a model of the earth as you know it. Include labels. Your model should try to answer the following questions:
   1. What does earth look like?
   2. Where is the volcano and what’s causing it?
   3. How is it exploding?
   4. Where does the lava come from?
   5. What is making it hot?
2. Share your model with your group.

**Coming to a Consensus**

1. Using the paper provided, you will create one model for your group.
2. Discuss your answers until you agree—try the following conversation starters to help your discussion along:
   1. “I liked the part of your model that shows…”
   2. “I’m still confused about the part of your model that shows…”
   3. “I need more information about \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in your model.”
   4. “I think this part of the model is better because…”
   5. “This model shows that…”
3. After you’ve completed your model, go to the website [Earth's Structure Interactive](https://www.learner.org/interactives/dynamicearth/structure/) . Read about the layers of the earth. Add the layers to your model (don’t forget to label them).
4. Brainstorm with your group: What caused the layers to separate like that? Write your prediction in your notebook.
5. Convection Currents Activity – as a class.
6. Types of Plate Boundaries –

The modern **plate tectonics theory**, states that the earth's outer layer, or **lithosphere**, is broken into several large slabs called **plates**. These plates, which hold the continents and oceans, are slowly but constantly moving around the planet. The movement of the plates not only supports our understanding that continents are not fixed and moved over time, but also explains how and why earthquakes, volcanoes, and other geologic events occur.

* 1. There are three types of plate boundaries and a fourth, “plate boundary zone” in which the type of plate boundary is not clearly identified. Use the [Dynamic Earth Website: http://www.learner.org/interactives/dynamicearth/plate.html](http://www.learner.org/interactives/dynamicearth/plate.html) to answer the following questions in your notebook.
  2. Copy this sentence into your notebook and fill in the blank: The place where two plates meet is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and they have different names depending on how the plates are moving in relationship to one another.
  3. What are the three types of boundaries? Copy this table into your notebook and sketch the direction of plate movement for each and list example(s).

| Boundary 1 | Boundary 2 | Boundary 3 |
| --- | --- | --- |
| Sketch | Sketch | Sketch |

1. To summarize our learning today, write a paragraph at the bottom of your investigation. Your summary should answer questions like: What does earth look like? Why does it look that way? What’s causing the volcano? Be specific and include diagrams when appropriate – we learned a lot of stuff relating to this phenomenon!