**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_**

**Using My NASA Data to Find Evidence of Volcanic Activity**

Directions: As you go through this lesson, follow along by answering the questions that you see in the presentation.

**A. What do you know? Answer these questions**:

1. What are some of the effects of volcanic activity?
2. How are volcanoes found in the geosphere related to the atmosphere?
3. How can volcanoes be hazardous to living things in the atmosphere?

**B. My Name is Aerosols** (After watching the video answer these questions)

1. Give examples of different sources of aerosols.
2. What are the effects of aerosols?
3. How does NASA study them?
4. Why does NASA study them?
5. If there are so many different sources of aerosols, how can we know that the aerosols we see in data are from a volcano?

**Fire, Ice, and Safer Skies: NASA Satellites Track Volcanic Clouds** (After watching the video answer these questions:)

1. What are some things you observed in the video?
2. What is a way in which satellites can help NASA scientists when observing sulfur dioxide?
3. How does this information help pilots?

**A. Group work:** Look at data obtained in the months around a major eruption of Kilauea in HI.

1. Was there any noticeable change? Explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What might have caused this? Look for supporting evidence.
3. Some of you will view the monthly SO2 images.
4. And some of you will view the Monthly Aerosols.
* Sequence them in order and note the changes over time.
* Select the image from June 2018 and use the My NASA Data Literacy Map cube with the image to answer questions on a separate sheet of paper which will be used to share with your peers.

**B. Graph a year of monthly data points for one variable**:

The **SO2** groups will graph SO2. The **Aerosols** groups will graph aerosols.

1. Using the data tables, create a graph. Make sure to determine the scales for your axes before plotting points. *Notice that these are decimal numbers*.
2. Discuss the graphs with your group.
	* What was the trend over the course of the year?
	* Was there any noticeable change?
	* What might have caused this?
3. Does this graph agree with the images for the same variable?
4. What evidence is there that there was strong volcanic activity?

**C. Analyzing the data**:

1. Make a claim about the significance of the volcanic activity at Kilauea in 2018.
2. Look at the Ten Year Aerosol Graphs and the Ten Year SO2 Graph.
3. Use the My NASA Data Literacy Graph Cube to answer questions about the graphs.

**Essential Question**: How can satellite data be used to detect volcanic activity?

Explain: