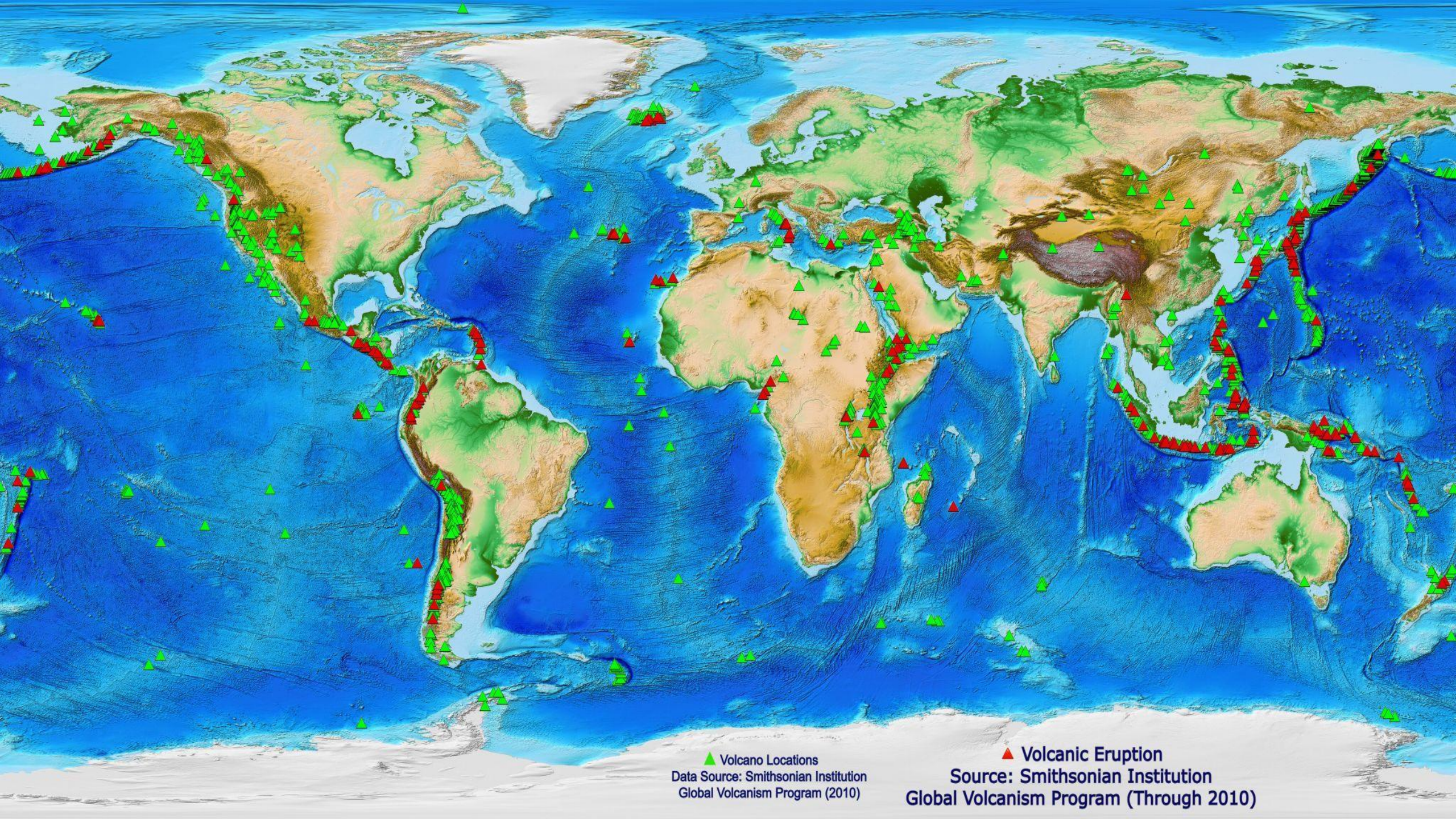
# READING DATA AND USING EVIDENCE

Fencepost Activity

# LET'S REVIEW THE DATA TOOLS GUIDE

- Data like we just saw in the Observation & Discussion exercise, data sets can come from a variety of sources – individuals can collect data at a local level or one point in time and then combine those observations/data to show data over time or over a larger spatial area.
- We can also collect data with satellites which provide large areas of remotely sensed observations and can even provide global pictures of data/science phenomena.
- Symbols can be used to convey information in a simple and effective way. Symbols are an important part of maps and can represent a range of different types of data.
- Symbols are described in a legend – a box or other place on the map where there is a key that says what each color of symbol means.


Volcano Locations
Data Source: Smithsonian Institution
Global Volcanism Program (2010)
Volcanic Eruption
Source: Smithsonian Institution
Global Volcanism Program (Through 2010)

## Design Tools for Representing Data

Below are some key design elements you can use as a guide in creating your own visuals to represent data. You can combine colors, patterns and symbols to portray your data in a meaningful way.

VALUE

Light —— Dark

COLOR

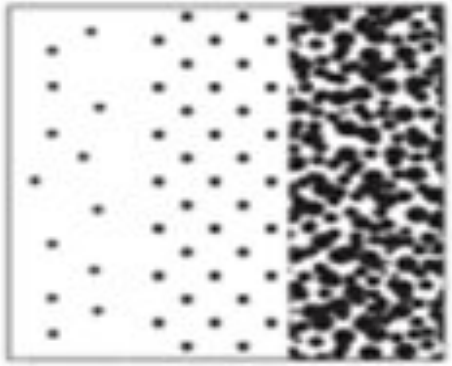
Warm —— Cool

SIZE/SCALE

Less —— More

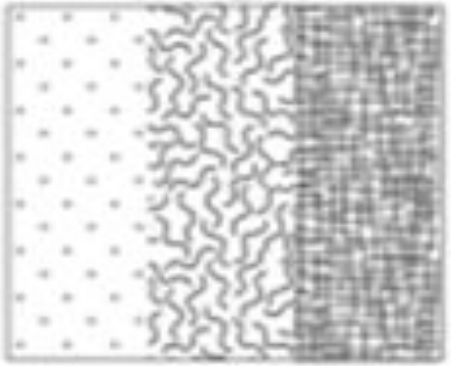
SHAPE

DENSITY



Fewer —— Many

PATTERN

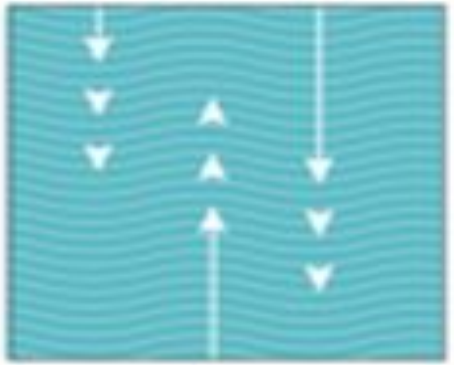


Calm —— Busy

INTENSITY

Weak —— Strong

DIRECTION/FLOW



1. Have you ever been down to the beach at low tide?

Yes No Not Sure

2. If you were at the beach during low tied, which animal do you think you would see the most of, as compared to normal?

Otter Whale Crab

Snail No animals

3. When do you think the tides are the most dramatic?

New Moon Waxing Cresecent

Full Moon Waning Crescent

4. What was the high tide in the morning on your birthday in 2022?

< 1 foot 2 - 4 feet 4 - 6 feet

6 - 8 feet 8 - 10 feet > 10 feet

https://tidesandcurrents.noaa.gov/noaatideannual.html?id=9442396

5. Do you think you're more or less concerned about the impacts of changing tide patterns than the average student in middle school at OPA?

A lot less concerned A little less concerned

About the same A little more concerned

A lot more concerned

# FENCE POST ACTIVITY – DO NOT WRITE YOUR NAME ON IT

- Read each question carefully.
- Make sure you record each symbol/pattern/color in the correct numbered box.
- Don't worry about your artistic abilities, just do your best.
- Feel free to use color.
- When you are done, lay it on the table at the back of the room.

# FENCE POST ACTIVITY – FINDING PATTERNS AND MAKING MEANING

- Look at each box, comparing the answers (i.e. all of the answers to question 1)
- What patterns do you notice?
- What do the patterns tell us about our collected data?
- Do you think the patterns would be different in other locations/with other ages/more people?
- How might you organize the fenceposts to make it easier to see patterns?
- Do you notice any connections between different answers?

1. Have you ever been down to the beach at low tide?


Yes


No


Not Sure

intensity

2. If you were at the beach during low tied, which animal do you think you would see the most of, as compared to normal?

Yellow


Otter


Whale


Crab


Snail


No animals

color

3. When do you think the tides are the most dramatic?


New Moon


Waxing Cresecent


Full Moon


Waning Crescent

Shape

4. What was the high tide in the morning on your birthday in 2022?


< 1 foot


2 - 4 feet


4 - 6 feet


6 - 8 feet


8 - 10 feet


> 10 feet

value

https://tidesandcurrents.noaa.gov/noaatideannual.html?id=9442396

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density