



## **Building Insights Through Observation - Making Local to Global Data Connections – Fence Post Activity**

Age group: middle school

Students will use their individual answers as data points and reflect on how the data looks in aggregate as a class and will consider how best to represent their data/answer choices.

Lesson time: 30 minutes

The goal is to spur students to think critically about data at local and global levels and to understand how data can be collected, compiled, analyzed, and represented.

This activity asks students to respond personally to a series of environmental, science, and data related questions and then compare and discuss responses. The goal is to harness the power of individuals to illustrate connections within a classroom, as well as to broader communities and systems. Students respond to a questionnaire creatively through collage, drawing, designing, writing, and coloring. The end results are collaged together into a classroom piece and used as a focus of discussion of connections and observations. The activity can be adapted or modified to suit the needs of your classroom and the resources that are available. This example is for severe weather, hurricanes.

### Materials needed:

- Long strips of cardstock paper approximately 10 inches long by 2 inches across so you can have 5 squares of 2 in x 2 in (dimensions and shape can be changed based on your circumstances/resources/space). The strip is divided into different blocks for the total number of questions that are asked in the questionnaire.
- Markers, pencils, old magazines, scissors, glue, crayons, and anything else you think will spur the students' creativity.
- String and clothespin for hanging the strips next to each other like a fencepost.
- Set of questions related to the environmental/science topic under study. Some can be multiple choice and some can be open ended.
- Design Tools Guide

### Activity:

1. Give each student the Design Tools Guide handout
2. Provide context about data collection/sources and symbology. Suggested text:  
"Data like we just saw in the Science on a Sphere exercise comes 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. People use symbols 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. Let's look at different ways we can represent data."
3. Review the Design Tools Guide - you can ask the students to reflect on the previous activity comparing maps about which design tools were used/chosen and why.

4. Give each student a strip of paper that is divided into 5 squares numbered 1 through 5. Hand out the survey questions.
5. Read through each question and discuss with the class what symbol they think would be best for each answer choice (this could also be done initially in pairs and then discussed/decided on as a whole class).
6. Have the students answer the questions on their strip using the colors/symbols that correspond to their answer choice. Instruct the students to work their way through the questionnaire and respond to the first question in the first block and so on. For some questions, students can color, draw or collage with images from the magazines. For other questions, a written word or phrase is ideal.
7. After all students have finished their responses, line all the students' work side by side as a "fence post" (tape them on a wall or attach to a string) so that you can see trends across the class. Explore the results with the class through the script provided.