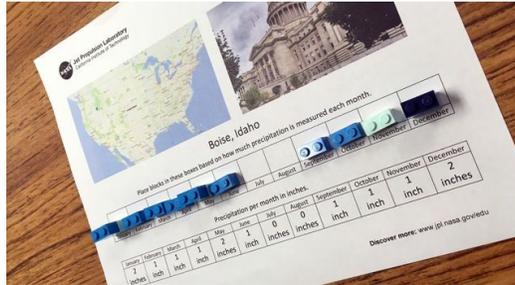Emily Lehnardt

June 4, 2019

Mandatory 3 Data and Math Everywhere

LEGO Precipitation Towers

Data Resource:

https://www.jpl.nasa.gov/edu/teach/activity/precipitation-towers-modeling-weather-data/

Engaging Context: Students will analyze and interpret data about different levels of precipitation around the United States. Students will use data sheets shown above. Each data sheet will include a specific location. Students will use real data from https://www.usclimatedata.com/ to gather information. They will build their graphs using LEGO's. Next, students will use computational arithmetic to find the mean, medium, least greatest and decimal estimation to compare data. Finally, they will transcribe their graphs onto graphing paper.

Measurable Objective:

Students will demonstrate, with 80% accuracy, data tables collected by building models of their graph using LEGO's.

Students will analyze data to compute, with 80% accuracy, the average precipitation rainfall for a specific location.

Students will compare and contrast data by graphing their data with 80% accuracy.
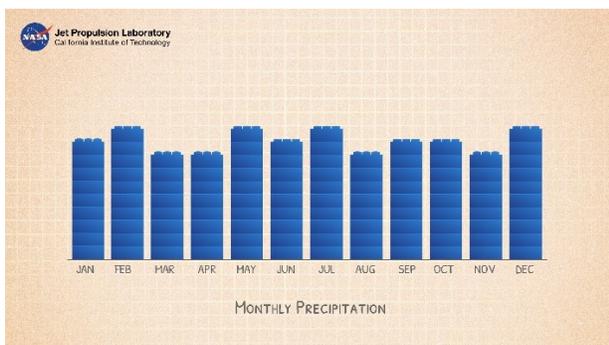
Standards:

3.ESS2-1: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

1.MD.C: Represent and interpret data

3.MD.A: Solve problems involving measurements and estimation.

5.MD.A.4: Use place value understanding to round decimals to any place.

Evidence:

Students use a hands-on manipulative (Legos) to collect data regarding weather data. They are

modeling real weather data on graphing paper. I have done this activity with my 6th grade

students. They are engaged and enjoy this activity. Since my class is on summer vacation, I am

not able to collect evidence. However, one way that I would like to collect evidence when school

resumes is a brief student survey. The survey would reflect depths of knowledge. For example,

the survey would include the following:

1. I can graph data with 80% accuracy.

2. I can collect and graph data and compute the average with 80% accuracy with help.

3. I can independently collect and graph data and compute the average precipitation rates
    for a specific location. Then, compare the average rates with other locations.

The questions on the survey directly link to the measurable objectives found at the beginning of

this lesson plan.

I am looking forward to implementing this assessment to this activity to discover if this
    assessment

will increase student depth of knowledge and understanding.

Here are other assessment suggestions to help teachers and students assess their understanding

regarding how to collect and graph weather data.

Other suggestions for assessments include:

The data and observations recorded on the student worksheet could be used as an assessment. In

addition, you can have students create a more traditional graph of the data on paper and use that as an assessment.

Additional questions as an exit ticket or call-and-response could include:

- *Which locations have similar precipitation patterns? Which are very different?*
- *What additional information would you need to know to determine whether the towers represent rain or snow?*
- *What are the impacts of having too much or too little rainfall in a season or in an entire year?*