

## Authentic Data Integration

**Source:** NASA's Global Precipitation Measurement  
[https://www.nasa.gov/mission\\_pages/GPM/main/index.html](https://www.nasa.gov/mission_pages/GPM/main/index.html)  
<https://svs.gsfc.nasa.gov/cgi-bin/details.cgi?aid=4285>

**NGSS:** K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time.

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

Currently we are using EL Education for our language arts curriculum. Within the curriculum, it connects to other content areas. The majority being science. There is an entire module on weather titled, "Learning through Science and Story: Weather Wonders." The NGSS mentioned above is the main science standard for the module. What is lacking in this curriculum is authenticity and the teacher's freedom to use phenomena in our instruction.

Throughout the module, students are observing and recording the weather daily. At the end of the week, students identify patterns and describe how the weather affects them personally in real life. For example, students are asked to describe the weather and think about what clothing they should wear for the weather that is occurring. We also learn about the different types of weather. I chose NASA's GPM to spark interest in the tools that meteorologists use to communicate with us about the weather. There are videos that show GPM capturing Hurricane Delta as it approaches the Gulf as well as an animation of heavy rains in South Africa. These videos will hopefully engage students to ask questions. I am curious to see how many students have never seen these animated maps before. I am hoping it will engage them enough to ask questions about what is happening. What do the colors mean? Why does the animation repeat itself? Where are we on the map? Does this happen where we live? I love the animations because it will show students that weather can be represented in multiple ways, just not by what we observe as it is happening.

The data can be used to create lessons that can also be connected to other content areas. Above I also listed a lesson from [www.jpl.nasa.gov/edu](http://www.jpl.nasa.gov/edu).

**Lesson Overview:** This lesson uses stacking cubes as a way to graph precipitation data, comparing the precipitation averages and seasonal patterns for several locations. Variations on the lesson can accommodate various ages and ability levels.

I like this lesson because it gives students the opportunity to observe our local weather, as well as other places around the world. The discussion questions are directly related to the NGSS, and crosses over to math where students compare two objects with a measurable attribute, to see which object has "more of/less of" the attribute and describe the difference.