

Authentic Data Integration

A. Data Source

Title: Land Surface Temperature (and Vegetation and Snow Cover)

Link: https://eoimages.gsfc.nasa.gov/images/globalmaps/data/mov/MOD_LSTD_M.mov

B. Lesson Enhancement

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

In 3rd grade, students have been learning about seasonal weather patterns but have not been exploring the data that informs these weather patterns. The heat map enhances the topic by exposing students to global-scale weather visualizations that scientists actually use. I have always taught high school and I am sad to say that while I expose students to graphing data, I have not often exposed them to current real-world data that they can interact with and that is relevant to their lives. I usually use data from regents exams or AP exams and then ask students to practice graphing. In this way, graphing is simply a skill they know how to do but often cannot see the relevance behind the graphing. In this interactive dataset by NASA, students move beyond their own data tables and bar graphs to interpret satellite-based graphics that represent seasonal temperature conditions. My goals are to introduce students to authentic data representations used by scientists and strengthen data literacy by bridging student-collected local data with global visualizations.

C. Interdisciplinary Context

The heat map activity naturally integrates multiple content areas. Students are engaging in earth and space systems by analyzing heat maps that show regional temperature differences by season which can be connected to patterns in the water cycle or even plant growth. Furthermore, math is essential in this unit as students relate colors to number ranges, estimate temperature differences, and construct data tables from the data in the map. Art can also be integrated here by having students create their own color-coded visual representation of seasonal data or weather changes in our town.