

Engaging Context Data Integration

My Nasa Data: Earth System Data Explorer <https://mynasadata.larc.nasa.gov/EarthSystemLAS/UI.vm>

Chlorophyll Data

How does the data enhance your topic/lesson/unit? What new objectives can you address? How does it change the teaching/learning?

This data set opens a bountiful approach to learning about phytoplankton and chlorophyll. This data set allows me to teach about changing conditions in the ocean with the changing seasons. The set also would allow for a look at productivity by latitude and by season within the ocean. Using this data would give a more interactive approach in learning about productivity via chlorophyll concentration. I could ask an open-ended question and students would have the tool to research the answer.

What is your opinion about using data in the classroom, either collected by student-observation or from another source?

When authentic data is used in the classroom, engagement seems to accelerate. I do have a level of anxiety when using data due to the learning curve with utilizing the data sets. In addition, if our internet is spotty or slow, the lesson loses steam if students get frustrated with accessing the data. However, I do feel the risk is worth the reward. Perhaps one of the videos/tutorials could be assigned prior to the lesson which shows students how to access/use the data set. The option to allow students work collaboratively to solve a problem or look for a solution can elicit interesting questions and strong mastery of a standard.

What is your rationale for the use of the data source?
Clearly explain how the data can be used to integrate across STEM content areas.

The data source allows for a multi-faceted approach to problem solving and can easily be manipulated to home in on specific areas of the ocean at specific times of the year. I hope to have students make the connection between latitude and incoming solar radiation related to the productivity in an area. Furthermore, I would like for students to quantify productivity which would integrate math into the lesson. Students may need to do some additional research outside of looking at the data which would contribute to language arts content.

How can the use of this data help to integrate across STEM content and/or pedagogy?

Students will need to use calculations to determine the rate of photosynthesis and will need to use multiple sources of information to synthesize a final report which will integrate science and math. Use of the data and understanding the source of the data will highlight technology employed by NASA. The engineering component could be explored by extending the look at productivity of phytoplankton to helping design a biofuel plant.