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Methods of STEM Education
Data Integration

National Oceanic and Atmospheric Administration's Global Science Investigator:
https://coast.noaa.gov/psc/dataviewer/

Sections of the Global Science Investigator are quite useful when teaching about human impacts on climate to third graders. There is also data that allows students to look at maps of weather hazards such as, hurricanes and tsunamis. The data on hurricanes from 1950-2005 is useful because students can use it to see the frequency of hurricanes in this 55-year period and where they most often occur. Another tool on this website that I would show to the entire class during my instruction is the "Sea Ice Extent". This is a great visual representation of the changes in sea ice coverage from 1979 to 2004. Both of these representations of data can be used when teaching a unit about the climate or Earth and human activity. This data enhances lessons because it provides students with a visual representation of these real world problems. Students can read about the impacts of hurricanes or glaciers melting, but being able to see the large number of hurricanes that have occurred within 55 years or changes to the ice caps can have a greater impact on their learning.

I believe data can be used to further students' understanding of a topic. Data provides students with more specific evidence that can

allow them to understand the details of a subject more clearly. For example, students may learn about glaciers in the Arctic melting by reading and watching videos, but viewing data can deepen their understanding. The visual representation in the Global Science Investigator shows students the true impacts of the glaciers melting over an extended period of time, something they wouldn't be able to see without data. However, data needs to be truly grade level appropriate. Some of the pages on the Global Science Investigator sounded interesting and are related in part to some of the science I teach, but some of the topics were too advanced for my students. I would tell students to only look at specific pages rather than explore the whole website because that may lead to confusion. However, having students collect data early can provide them with data that connects to their lives more. This creates a personal connection that makes the data seem valuable and can teach them about the process of data collection.

I can create interdisciplinary lessons or activities using the Global Science Investigator in a few ways. I can have students read background information that pertains to the data and students can write their observations after looking at the data on the website. I teach an Arctic unit in social studies where students study geography, the climate, and Arctic animals. The "Sea Ice Extent" can be incorporated into this social studies unit and relate back to how it

effects the animals and people who live in the surrounding areas. I would also incorporate technology by having students look at data sources using tablets or laptops so they can explore on their own. Some of the numerical data used in this data source are too advanced for my students to comprehend, but there are charts and graphs used that they can interpret. The Global Science Investigator can be used across all STEM content areas and interdisciplinary subjects.