

Methods of STEM Education

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Engaging Contexts Data Integration

Data can be used to engage students in learning, and data-driven decision making and student-centered investigations are key to integrated STEM into curriculum. In this paper, I select a data source on which to focus this assignment. I will describe how the data enhances a topic that I currently teach, and then further explain how the data be used to create interdisciplinary lessons and connect to multiple content areas in my classroom.

The current unit for my second students to learn is "Human use/waste & the environment". As they learn about methods of waste disposal and sustainable food production, it would be great to engage contexts data in this unit by providing them real data of plastic production and the size of The Great Pacific Garbage Patch. I found a website, "[THE EXPONENTIAL INCREASE OF THE GREAT PACIFIC GARBAGE PATCH](#)," that documented data entry on plastics, with a particular focus on its pollution of the environment and release the results of our study on the infamous Great Pacific Garbage Patch or GPGP.

While show the real data to my students in class, they were shocked by the fact that around 80 million kg of floating plastic debris of various size and shape, principally made of Polyethylene and Polypropylene, accumulated in

an area 3 times the size of continental France. In order to allow them understand the concept of “area”, I drew a model on the white board. It was a super powerful moment that my students suddenly understood how big the Great Pacific Garbage Patch was and they started wondering how to cause the huge garbage landfill in pacific ocean and what they could do to help with the issue. By learning about the data to show the growth of The Great Pacific Garbage Patch, my students did have chance to see the cause-and-effect between plastic producing and ocean pollution.

This data could be used to create interdisciplinary unit, such as an inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things. In social study strand, it could teach students the skills of formulating and asking questions, as well as Using and analyzing evidence from a variety of historical, geographical and societal sources. Besides, this data not only integrates math concepts, such as the concept of addition and area, but also incorporates geography knowledge, such as the position of the Great Pacific Garbage Patch and France.

Reference

Laurent Lebreton. (2018, March 21). The Exponential Increase of the Great Pacific Garbage Patch. Retrieved from <https://www.theoceancleanup.com/updates/the-exponential-increase-of-the-great-pacific-garbage-patch/>

