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Data Integration Assignment
SCED 548: Methods of STEM Education
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a) Data source: provide a title for the data and the SPECIFIC link for access.
September 2011 Texas Wildfires

https://www.ncdc.noaa.gov/sotc/fire/201109

b) Lesson Enhancement: Describe how the data enhances a topic that you currently teach or plan to teach. Include a 1 paragraph statement about your personal feelings regarding using data.

This data reflects the damage and habitat destruction done by the Bastrop wildfires a few years ago, from which the area is still recovering. In our science standards, we teach about the impact of changes to an environment on the populations and communities, focused on naturally occurring changes such as wildfires and drought. By looking at the data from this site, my students will not only come to understand the impact of the wildfires, but they will be able to start asking questions about how those fires would impact the populations there, leading us into our inquiry investigation. These wildfires impacted a few endangered species, including the Houston toad and Golden-Cheeked Warbler, the latter of which also lives within 10 miles of my campus. As part of the final unit assessment, my plan is to have the students design a plan to help protect the Warbler's habitat from future fires occurring, which will lead to them needing to learn about how the Bastrop area is recovering now, and conservation efforts there to apply them to the area near us. In the past, we have studied the Barton Springs Salamander but had a hard time with the students understanding its environment since they have misconceptions about the Barton Springs Pool being a true swimming pool, and with understanding the spring fed nature of the pool. By focusing instead on a forest habitat, which they have more experience with, it will enhance their engagement and ensure they have a better understanding of the concepts I aim to teach through the use of this data.

In my opinion, I feel like the intentional use of data to support standards can help to solidify the students' understanding of concepts and make it more 'real' to them. I could tell them all day that

wildfires have an impact on ecosystems, but having them actually read and see the maps showing the fires and the numbers of forest burned gives them something to hold on to. By studying the graphs, it would also lead to questioning the difference in number of fires per year and let the students have more buy in when doing the investigations, and lead to more scientific questions than if I simply asked what impact fires would have. Broad concepts such as changes to the environment can be hard for my students to grasp, but if we use real data to show the impacts, it can help them to understand it better and make it relatable in smaller chunks, which they can then use to apply learning to the broader context and understanding.

c) Interdisciplinary context: How can the data be used to create interdisciplinary lessons, discussions or activities in your classroom. How can you connect to multiple content areas?

This source can help me to tie in other lessons easily, especially in math. One of the standards our students historically struggle with is analyzing graphs and tables and we have recently been discussing ways to help strengthen those skills and incorporate more tables and types of graphs into our lessons in other areas, as a team. The website includes a wide variety of graphs and tables, which help to show the impact of the wildfires on the area, and would help me to give my students a great deal of practice in reading them and analyzing their features. This would also be a great way to tie in comprehending the data and looking at it to figure out differences and practice our calculation skills. Additionally, we could use it to look at area and perimeter, which we have just learned in math, to determine the total areas affected. It would also be interesting to see if we can figure out the range of the Warbler from its nest. I feel like the data included will give us a great springboard for their questions as we head into our unit; thinking specifically of the bar graph showing number of wildfires per year especially. I feel like that graph could help them to reach the conclusion that drought was a leading factor in the spread of the wildfires, as well.

In addition to math, this would be a great way to apply map reading and analysis skills we learned earlier in the year. There are many maps included in this site that show the wildfire impacts, but they also include many different types of legends as well as keys that show symbols to represent different values, which is something we struggle with interpreting as well. I think I would be able to help them build upon their map skills and apply them to these more technical maps, as well. Aside from the maps included within the article, there are also links to other maps which would help them gain more experience reading and interpreting the maps, as well as giving them more data to analyze as we learn about the impact of the fires.