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Methods of STEM Education- Elementary
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Data Integration assignment

Global temperatures from NASA :
https://climate.nasa.gov/vital-signs/global-temperature/

As we begin our graphing unit we often look at patterns in data and what we can extrapolate from the info to help us make our justifications. Students make claims and then use the data to back up their claims. In the data set above from NASA, the students would be asked to make a claim about the planet getting warmer. They could focus on the graph as a whole or on a specific time period (for example 1980-2019) and use the data to inform the audience about what is going on in our world. It changes teaching in the aspect they have something concrete to tie to their claim to substantiate it. It prepares the students to back up their arguments with hard data and forces them to explain their rationale while also using real world data.

I love the use of data in the classroom for several reasons. I alluded to one reason above, as it is always nice to have some backing to a claim that you make. I also love visuals because 5th graders can see the impact of the data or information being shared. We could tell them the majority loves chocolate ice cream, or we show a circle graph with one big chunk and a bunch of small chunks, it becomes more manageable for them to see the proportions and understand the gravity of the information. Valid data is just one more way to cement the point you are trying to get across. It is also interesting to play devil's advocate with data as well and ask the students if they could portray a point of view that is contrary to popular belief and how we sometimes manipulate data.

Using this data source above shows a very steady increase in temperature starting around 1920, but each decade has its own interesting tale that is told by the data. Even before 1920 the data is interesting and the students can make some interesting claims. We also use this data when we start to look at how temperature can affect a specific ecosystem and what would happen to the plants and animals if you start to make a shift in temperature. The infographic shows the temperature change based on color as well, so over the last 50 years they watch the planet go from a dark blue to a dark read,

indicating that things are getting warmer. That visual allows them to find a specific part of our globe and speak to whether or not it has gotten warmer and how it would affect the plants and animals of that specific ecosystem.

A great example of this is a student might choose the arctic region, They would try to explain and show that the temperature change is melting polar ice, destroying habitats for several animals. They might share that the warming of the seas causes certain plant species to die and therefore may affect the eating habits of some animals as well. We often talk about how this data is gathered and the tools they use to make this possible. It really does encompass the math, but ties in the science and technology into the lesson.