Data Source

Mapping the Ocean Floor
https://storymaps.arcgis.com/stories/ad79845a955c4908841b4741cecf3578

Lesson Enhancement

The interactive map generated from the data gathered through mapping the ocean floor allows students to explore the ocean floor and see what kind of habitats are present in different areas of the ocean floor. This can lead to further investigation by students of how land mapping compares to ocean floor mapping. They can also explore the different habitats that ocean animals live in. The data makes the map easier to read because students in upper elementary are learning about longitude and latitude and how to read different types of maps. I have many students who are curious about the ocean floor particularly because there is so much of the ocean floor that remains unexplored. This source of data is a place to get them started after they see the process that goes into mapping the ocean floor through the story map. I think this makes the learning more student led because the student's curiosity can be sparked even more and they can get ideas about what they could explore next without the teacher giving them step-by-step of what to learn. Self-directed students are curious, ask questions, and develop problem solving skills that will serve them for life. Teachers support the learning process and guide or redirect where necessary but the student leads the journey.

Using Data

I encourage student generated data in the classroom. I find they are more engaged and remember better what they are doing when it is up to them to collect the data and work with it.

We have a fish tank in the classroom and I asked students to mark the existing water level and then predict where the water would be after a four day weekend. When they returned, they measured what actually evaporated and figured the rate of evaporation. Then I asked them if it continued at the same rate and we didn't add water to the tank how long would it take for all the water to evaporate from the tank.

Our fish tank has also been used to calculate volume, test if the water was more acidic or base, observe fish behavior, consider filtration systems, and collaborate artistically to create a backdrop. It gets a lot of use as does our leopard gecko habitat.

I also enjoy bringing real data from another source especially when it is something interesting where we don't have access to collect the data ourselves. A case of this would be any ocean related data because we do not have easy access to the ocean but many students are fascinated by the animals, plants, and activities that are associated with the ocean.

Rationale

This particular data source contains accessible information that is an area of interest and curiosity for my students which also ties into standards in map reading skills development. The science is

in the mapping results showing what areas have which kind of habitat. The different technology that was used to map the ocean floor is explained in the story map. The engineering can be brought into this lesson by discussing the issue of mapping the deepest parts of the ocean and designing something that could possibly improve on current methods of mapping or discussing the fact that only 10% of the ocean floor is mapped and proposing solutions that could speed up the mapping process. The math is in reading the pie chart.

Interdisciplinary STEM

The data in this story map provides enough information to pique curiosity, which could be followed down several different areas of interest while still showing how all the disciplines tie together in real life work. Students can ask questions to help them come up with possible improvements to current technology or follow a completely different path that was discussed briefly in the story map and explore the impact of humans on the ocean floor.