

Authentic Data Integration

Starting this quarter, my students and I will focus on studying several aspects of water. Overall, we discuss where water comes from, how it effects the land around it, how strong the consistent force of water can be, and erosion, but also the different ways people can try and prevent erosion from happening.

The very first topic we focus on is where water comes from. This is a challenging concept for my students at first - especially considering the fact that we live close to a river, a creek, and a lake. Most students have never stopped to think about how the water gets to those areas, it has just always been there. Through exploration the students are able to build their knowledge of water and where it comes from, but we have never stopped to look at data or information that is directly linked to where we live. We have always just used a map of North America that shows some of the rivers in our country.

After doing a little research, I found a website that shows several different maps of Wyoming. This website not only shown the different counties, but it also shows all of the rivers in our state as well as a physical map. [Wyoming Map Collection](#) would be a great way to bring this concept closer to home with my students. I could show them rivers, creeks, and lakes they have actually been to and water they are familiar with making the information they learn here a little more important to them. Before 2nd grade, students don't get many opportunities to look at or use real maps. In 1st grade they have the opportunity to see picture representations of maps - such as a map of their community or a map of a different town, but not a lot of exposure to physical maps that show the different landmarks we have in our area.

In the past, we have used [Mystery Science](#) to help us with these concepts. The class starts by watching a video about how a river can take a water bottle and move it down stream. I ask the students what they notice,

and then we present the students with the question, “Why does a river flow?” Students are given the opportunity to generate ideas and then share their ideas with the class. We then look at the map of North American that has a couple of rivers on it, but the map is missing physical features such as hills, valleys, and mountain ranges. Those aren’t introduced until later on in this lesson. We also spend a little time talking about which way the rivers flow, and I ask the students, “Do these rivers have anything in common?” We also focus on where the different rivers start and where they end. After a short class discussion, we talk about the fact that all major rivers flow out towards an ocean. This is where I could incorporate the website [Wyoming Map Collection](#) and bring this study closer to home for my students.

I truly believe that incorporating this data would enhance this activity and it is such an easy piece to include that anyone, no matter what state they live and teach in could do to help bring this learning a little closer to home for their students. According to the NGSS Crosscutting Concepts, students need to identify patterns. Focusing on the pattern that the mountain ranges, hills, and valleys effect how rivers flow is just one way to meet this standard. The Disciplinary Core Ideas also expect students to explore the roles of water in earth’s surface processes – for example, “Water in found in the ocean, rivers, lakes, and ponds.” (2-ESS2-3 Earth’s Systems| Next Generation Science Standards, n.d.)

I have never really looked at this lesson as a STEM activity. I have always considered it to just be science. However, after a little reflection on the expectations of the activity, I believe this is an introduction to STEM and helps the students build their critical thinking skills. I incorporate the use of technology from the teacher’s standpoint, but not the students. I would have an easy enough time incorporating math – we could simply add a graph or two of the student’s ideas when it comes to discussing why a river flows. Several students come up with similar if not the same idea and this would be a way to “celebrate” the shared thought process instead of just skipping over the fact that several students think in similar ways.

Returning to the [Mystery Science](#) lesson, after talking about where rivers end and using the data found on the [Wyoming Map Collection](#) website, the class would then talk about where rivers start. I feel a little conflicted looking back at this lesson now. My biggest issue is that [Mystery Science](#) seems to be giving the students the answer to why rivers flow instead of having them figure it out themselves. Before teaching this lesson on Monday, I feel that I would need to make a few adjustments to the structure of their lesson and have the students figure out why rivers flow. This lesson is accompanied by an activity where the students create a mountain using two pieces of paper. Next, they color the top of the mountain with a blue marker. After spraying their mountain with water, the students are able to see the blue water flowing down their mountains.

This lesson is a great introduction to the water cycle. After completing a little more research, I found a website that introduces young children to the water cycle. This website - [The Water Cycle](#) provides the students with an interactive water cycle map they can use to explore the concepts of ground water and the other components of the water cycle. I realize this isn't something we specifically focus on in 2nd grade, but I honestly don't see the harm in introducing it to the students a couple of years early. This way when they are introduced to it in the future, the students will have a little background knowledge they can use to make connections.

References

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