Introduction

Welcome to your exploration of the journey of a water droplet! During this lesson, you will not only be learning about the water cycle, but also thinking more critically about how water droplets that start in different environments may experience the cycle differently. You will also have an opportunity to share your artistic and writing talents while creating a children's book with your group. I hope you enjoy learning more about one of the most important and unique features of planet Earth!

Tasks

Welcome water droplet detectives. Your new mission has just arrived. You, along with your fellow water droplet group are to document the journey that you have taken through the water cycle. Just as a day in the life of a 6th grader is never exactly the same as any other 6th grader, the life of water droplets are just as different. You are to use the websites provided to learn about all the different ways that water droplets move through the water cycle. Please keep in mind, that just because it is called a “cycle”, it does not mean that all droplets take the same journey. For example, some may go from liquid to ice, back to liquid, and then ice again several times before ever having a chance to experience one of the other forms that water can take. Your journey will very much depend on where you begin. Some of you will begin as part of a glacier, some in a desert, some in a cloud, some on a ski slope, some in a tree, and some in a boiling pot of water. Please Keep a journal/diary describing your journey. You must 15 journal entries, each with a sketch or illustration, and each possible phase of the water cycle must occur in at least one entry. When you have completed your journal/diary, you will use it to help you and your group design a children's book about the water cycle. Each page must include text and an illustration. You are free to name your water droplet and give him a personality. The group can pick and choose as they share their journals/diaries with each other which entries would be the best fit with the book that is being created. Have fun!

Process

1. Students will independently search the pre-selected sites to learn about the water cycle.
2. Students will compile a journal/diary depicting 15 days in the life of a water droplet. Students will be randomly assigned various locations as starting points for their water droplet. It is important that the starting point is taken into account when determining the possible 15 day journey their droplet may take. For instance, a droplet starting in the desert will most likely not be frozen the next day, but evaporation or transpiration may be a more likely possibility. Each of the 15 pages should include at least 5 complete sentences about their day. Where you are, what the environment/weather/climate is like, and how much water is found there are all good things to point out in each entry. Drawings should accompany the journal/diary entries, however, sketches would be appropriate. This is the individual portion of the assignment.
3. Students will form a group with the others who shared the same water droplet starting point. Groups will share diaries/journals with each other and using them as a starting point, create a children's book about the life of a water droplet. Each page must have a related illustration. Sketches are not appropriate here, fully colored, well thought out pictures should be prepared. The purpose of the children's book is to teach young people about the water cycle, the forms water can take, and any related vocabulary in a fun way through text and illustrations. Students will receive a group grade for the finished book. For extra credit, students can use http://www.flipsnack.com/ to turn their books into digital flip books. Students would be able to scan their illustrations to use in their digital versions.

Evaluation

On this project you will be receiving an individual grade reflecting appropriate computer usage and your diary/journal, and a group grade for you completed children's book. The individual diary/journal grade will include spelling, the use of complete sentences, and number of entries, and whether or not the journey your droplet takes, based on where you begin, makes sense. The group grade for the completed book includes spelling, an appropriate journey (based on where the journey begins), illustrations, a story that documents at least 15 days of the droplet's journey (it is ok, and often appropriate, to remain in the same stage of the water cycle for more than one day).
I hope that you enjoyed your exploration of the water cycle and how often, it does not seem to be much of a cycle at all!
As we continue through our lesson on water, think about all that your research has taught you.

Do we need to worry about the water cycle? Is there anything that we can do in our own lives to help protect the water on Earth?

What impact do the choices we make (long showers, water running while brushing teeth, etc) have on the water cycle? Should we be working on new technologies to help make more fresh, clean, drinking water?

I look forward to getting a chance to enjoy all of your wonderful water cycle books!

I am also excited for you to have a chance soon to share your books with some elementary school students!
The water cycle is one of the units that I most enjoy teaching to 6th graders! Being from Michigan, water is one of the things I like best! Each summer, my husband and I enjoy spending time with our three children enjoying the Great Lakes. What a remarkable natural resource we have access to! It is important to me that my students not only understand the good fortune we have to live so close to so many large bodies of fresh water, but also the importance of protecting our planet’s water. In this lesson, your students will not only become introduced to the water cycle, but they will also learn the associated vocabulary and processes that accompany the water cycle. Through this project, the students will learn that the water cycle is not necessarily followed in any one specific order, but can take many different paths. They will learn the impact the starting point of their droplet has on their journey, and in turn, will begin to understand why water is so abundant in some areas, yet so sparse in others.

Standards
This lesson addresses Michigan Standards & Benchmarks:

**Science - Hydrosphere - V.2 Middle School benchmarks 1, 2, and 3**

**Benchmark 1:** Use maps of the earth to locate water in its various forms and describe conditions under which they exist.

- **Key concepts:** Liquid water forms—lakes, rivers, oceans, springs. Frozen water forms—continental glacier, valley glacier, snow on mountains, polar cap. Gaseous water in atmosphere.

- **Tools:** Relief and elevation maps; satellite images

- **Real-world contexts:** Local lakes, rivers, streams, ponds, springs; examples of frozen water, including snow, glaciers, icebergs, polar regions, frozen Great Lakes shorelines.

**Benchmark 2:** Describe how surface water in Michigan reaches the ocean and returns.

- **Key concepts:** Water path—run-off, creeks, streams, wetlands, rivers, Great Lakes. Sources—snow melt, rain fall. Gravity. Water cycle—see EAW-V.3 m.3. (See EH-V.2 m.3 about groundwater.)

- **Real-world contexts:** Maps showing streams, lakes, rivers, oceans; examples of motions of rivers and lakes; investigations of rivers and lake temperatures; saltness of ocean.

**Benchmark 3:** Explain how water exists below the earth’s surface and how it is replenished.

- **Key concepts:** Ground water—water table, spring, porous, saturate, filtration. Sources—snow melt, rain fall.

- **Real-world contexts:** Examples of groundwater, including springs.

Standards and Benchmarks located on Michigan.gov

I use this lesson for 6th grade science

Credits

Other