**Water Cycle**

**Lesson #3:** **Where is All the Water?**

**Time Frame:** 45 minutes

**Learning Standards:**

*Science*

Earth and Space Science: The Water Cycle

1. Describe how water on earth cycles in different forms and in different locations, including underground and in the atmosphere.

**Student will be able to:**

1. Explain where all of the water in the world is found.
2. Discuss the importance of ground water and water conservation.

**Resources and Materials:**

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| **Item** | **Amount** |
| Science notebooks |  |
| Globe (not provided) |  |
| Plastic globe ball of the earth | 1 (in bin) |
| Ziti in bags (with 2 red and 1 green ziti) | 10 bags (in bin) |
| All the Water on Earth pie graph worksheet | 80 (in bin) |

**Focus Activity:** Ask the students to answer the following prompt in their science notebooks: List all the ways you use freshwater every day. If students would like an example, ideas may include drinking, bathing, washing clothes and dishes, and watering plants and lawns.

**Introduction:** Show students the globe of the earth that is in their classroom. Ask a student to identify where they live on the globe. Then, play a game throwing the plastic globe ball around the room between the students. Students must catch the ball with both hands and then tell where their right thumb lands. If it lands on water, draw a tally for water on the board, and if it lands on land, draw a tally for land on the board. Do this enough times so that you can demonstrate that most of the earth is made up of ocean water. To ensure that every student gets a chance to participate, ask students to sit after they have caught the ball once. Tell students that today they will explore where all of the water on earth is found and how it can be used by humans.

**Activity:**

1. Ask students if they know which bodies of water are saltwater and which are freshwater. Have they ever tasted saltwater?
2. Ask students if water is found in places other than on the surface of the globe. Students should remember from the water cycle that some water is underground and some is in the atmosphere. Explain that there is such a tiny amount of water in the air compared to other places that it will not be included in the following activity (0.001%).
3. Break the students up into small groups. Give each group a bag with ziti. Explain that there are 100 pieces of ziti and that they represent all of the water in the world (100%). Note: Each bag will contain two red ziti and one green ziti. Ask the students to think about percentages and discuss what the green and red ziti might represent. Discuss that the uncolored ziti represents all of the water that is in the oceans (97%). Show the students the globe again and refer to the ice caps on each pole and the mountains with snow. Explain that the red ziti represent all of the water in the ice found at the poles and in glaciers. Ask students what the final one green ziti represents. It represents all of the freshwater that is available for all of the plants, animals, and people on earth.
4. Lead a discussion about water conservation with the class. Why is it important to only use water that is needed? Is it possible that we could run out of freshwater? What are some things you can do to help save water (only use what is needed)? What other types of living things besides people need fresh water to survive?
5. As time permits, give each student a copy of the “All the Water on Earth” handout and explain that they will make a pie graph that represents all of the water in the world. Have the students construct, color, and label the graph (97% ocean, 2% glaciers and ice, and 1% fresh water).

**Closure:** Discuss the following questions as a class. Why is it important to conserve freshwater? What happens if a river or a lake becomes polluted? Can it still be used as a source of freshwater? Why is it important to keep our sources of freshwater clean?

**Assessment:** Science notebook responses, participation in class discussions and activities, All the Water on Earth pie graph worksheet

