**Water Cycle Demonstration**

**OBJECTIVE:**

Demonstrate how the water cycle works.

**TERMS TO GO OVER:**

Water cycle

Evaporation

Condensation

Precipitation

Accumulation

**LAB MATERIALS:**

* Aquarium
* Styrofoam blocks (one as large as to be the cover of the acquarium)
* Razor
* Glue
* Aquarium rock
* 1-inch wide wire screen
* Sand
* Green food coloring
* Glitter
* Water
* Aluminum foil
* Duct tape
* Halogen light
* Ice

**GROUP LEADER/VOLUNTEER/TLC ROLE**

Create and explain the water cycle.

**SETUP PROCEDURE**

1. Cut 2 block of Styrofoam (between 1-2 inches) so then it fits half the bottom of the tank.
2. Place one of the 2 blocks onto the bottom of the tank
3. Next, partially imbed the screen on the edge of the styrofoam block, on the side towards the middle of the tank.
4. Put a level layer of aquarium rock ontop the Styrofoam block, as high as the wire screen.
5. Next, you are to build the land.
   1. The second block of Styrofoam will be the base of the land – do not modify this layer.
   2. Using Styrofoam pieces, glue layers together up to a high point – this will be the mountain.
   3. Allow the glue to dry.
   4. Carve out the mountain, streams coming off the mountain, a lake, and rivers that empty out one side of the model.
   5. Test the flow of the water and make adjustments.
   6. Optionally: paint the land. If not, place the model on top of the aquarium rocks, pointing the end of the rivers toward the empty side of the tank.
6. Place the sand against the Styrofoam block to create a beach, but keep it below the wire screen.
7. Next, fill the lake with water, and then fill the empty side with water halfway up the bottom Styrofoam block.
8. Then, add a drop of green and blue food coloring into the “ocean” water.
9. Next, place the Styrofoam cover onto the aquarium and cut a hole over the mountain.
10. Next, cover the hole on the bottom side of the cover with aluminum and secure with duct tape.
11. Create a cover for the hole that overlaps by at least 1 inch
12. Place ice onto the aluminum, put the hole cover over it, and duct tape it shut.
13. Finally, point the halogen light on the ocean portion of the tank.

**LAB PROCEDURE**

Explain the water cycle.

**WHAT IS HAPPENING?**

The halogen light heats up the ocean water and then the water begins to evaporate. As the water rises, it travels toward the cooler side of the tank. Then it condenses once it touches the cold aluminum and precipitates down onto the land model. Some of the water will accumulate in the lake, and some will travel down the streams and rivers back to the ocean. Some of the water will also seep down into the ground water, represented by the aquarium rocks. The reason you needed to have the ocean lower than the ground water is because people use ground water as drinking water (wells). You can explain that some places have problems with salt water contaminating the ground water. And, tada, you have the water cycle.