

Water Cycle in a Bag

Introduction

The amount of water on our planet never changes, but water is constantly cycling around us. Set up your own water cycle at home to learn more about how water moves!

Think About This

Where does rain come from?

Materials

- 1 quart-sized zipper freezer bag
- 1 permanent marker
- 1 cup water
- clear tape
- blue food coloring

Directions

Use a freezer bag to make a working model of the water cycle.



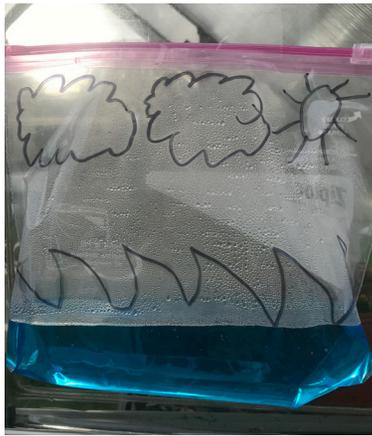
- 1 Draw a water scene on the outside of the freezer bag using the permanent marker. Think about including waves at the bottom of the bag and clouds towards the top of the bag.
- 2 Add two drops of food coloring to the water and stir. Pour 1 cup of water into the bag.
- 3 Close the bag and seal it completely.
- 4 Place tape on the top of the bag and tape it to a sunny window. If possible, choose a window that receives a high amount of sunlight.
- 5 Check on the bag throughout the day (or even over several days) and observe the changes.



Water Cycle in a Bag Continued

Questions to Ponder

- Why aren't the water droplets the same color as the water in the bottom of the bag?
- What might change how quickly water droplets form?



What's Happening?

As the sun heats the water, the water molecules begin moving faster and faster and turn into water vapor. The water vapor rises to the top of the bag. This process is called **evaporation**. Because the freezer bag is securely closed, the water vapor cannot completely escape and it collects at the top of the bag.

As more water vapor collects, the water molecules combine and form tiny water droplets that we can see. The collection of droplets is called **condensation**. The condensation is clear, even though the water has color. During evaporation, it takes more energy for the color to evaporate than the water itself, so only the water becomes vapor. Once enough droplets form they become heavy and fall back into the water. This "rain" is called **precipitation**. This process then repeats!

All the water on Earth has been here since the planet was formed. Water is constantly moving in this water cycle of evaporation, condensation, and precipitation. The water we drink from the kitchen faucet could contain the same water molecule that a dinosaur once drank! The water cycle helps keep our water clean, causes some of our weather, and regulates (or controls) the temperature of Earth.

Take it Further

Plants play a vital role in the water cycle. Water evaporating from a plant's leaves is called **transpiration**. To observe this, place a plastic grocery bag over a plant or leaves on a tree branch near your home. Leave the bag on the plant overnight. In the morning, check the inside of the bag. You will likely see many small water droplets on it, which shows the transpiration process!