

# Ziploc Water Cycle

## Objectives:

### TLW

- demonstrate the water cycle by creating a model.
- communicate observations by relating the model to the actual process.
- discuss the limits of the model by comparing the actual process to the observed model.

## Materials:

(per student)

Ziplock bag

Sharpie permanent markers in multiple colors

Small, natural color gravel (2 tablespoons)

Water (1 teaspoon or 5 mL per)

Ruler

Lab notebook



## Background Information:

The water cycle can be described as a closed system of continuous movement of earth's water. The sun's warmth causes surface water to evaporate from the land and ocean. As the water evaporates, it is invisible. As the water vapor cools, it condenses into water droplets or ice crystals. Precipitation, such as rain or snow, is the process whereby water falls back to the earth's surface.

## Procedure:

1. Review the water cycle process with students by stressing the processes of evaporation, condensation, precipitation and accumulation.
2. Tell students they will create a model of the water cycle within the baggie.
3. Next, students will make the model by marking a line 1" from the bottom of the bag. They will later add gravel to represent the aquifer below this line. Students will draw an outdoor scene using the markers to illustrate a colorful image of the sun, clouds and landforms they choose to add (hills, lakes, streams, groundwater formations, etc.). The scene should be above the line, directly on the Ziplock bag.
4. Students will add 2 tablespoons of gravel and 1 teaspoon of water to the bag. The gravel models an aquifer. (Students often have the misconception that an aquifer is an underground stream or lake rather than gravel containing water.)
5. Have students zip their bags closed and mount them on the classroom windows.
6. Over a period of days, have the students collect observations and diagram the water cycle they observe in the lab notebooks. They should explain the accuracy of the model as well as the limits of the model.

## Assessment:

Check student understanding by assessing their lab notebook observations and explanations. Students should communicate the process they observe, tell how it is similar to what we observe in the real world and share the limits of the model.