Water Cycle Demonstration

In this activity you will create your own little water cycle in your classroom. You could begin this activity by sharing a clip about the water cycle, for example: https://www.youtube.com/watch?v=z5G4NCwWUXY

For this demonstration you will need:

• Two glass bowls
• Measuring cup
• Plastic sandwich wrap
• A sunny spot for the bowls to sit

Instructions

1. Show students one of your glass bowls. Ask a student to use a measuring cup to pour a measured volume of water into it. Ask students what will happen to the water in the bowl over the next few days. Record their ideas.

2. Take another bowl and ask a student to use the measuring cup to pour exactly the same volume water into it. Ask the student to help cover the bowl in plastic sandwich wrap. Ask students what will happen to the water in the bowl over the next few days. Record their ideas.

3. Ask students if they think there will be a difference. How will they know for sure if one or both the bowls have less water?

4. Observe the bowls the next day. Which of the students’ ideas match their observations? Can students explain what happened in the two bowls? To help explain the droplets of water under the shrink wrap reflect on what occurs on car windows on cold mornings and in the bathroom on the mirror after a shower. Consider if your students are ready for the term ‘condensation’.

• Did the uncovered bowl lose water? Where did the water go?
• How did their original ideas match their observations?
• Can students make a statement that explains their observation?

5. Share the following image with students. Ask students to explain what they see and what the arrows might mean. How can they compare the diagram with their experiment?
You could then explain to students that this image describes the way that water moves around our earth. The water cycles down from the clouds as rain (and snow and hail), filters into the ground and runs into the sea, is drawn back up to the clouds from the sea through evaporation and from plants through transpiration, where it can fall again as rain.

In the bowl with the plastic wrap you observed the way sunlight draws condensation up from a water source. This water clings to the plastic wrap in a way similar to being in a cloud. When the drops of water get heavy enough they then fall from the plastic wrap back into the water.
Extension: A more sophisticated water cycle.

All you need is:

- Glass jar and lid
- Plants (you could use easy-to-grow sprouts if you like – then you can eat them when they’re big enough)
- Bottle cap or shell of water
- Soil
- Sand
- Small rocks

Directions:

1. Fill the jar as in the picture and put the lid on (small rocks on the bottom, then sand, then soil and then the plants).

2. Put the jar in a sunny place and see the water cycle work its magic!

Some other suggested activities:

Water course: Have students work in groups to design and construct a water course out of pipes, buckets, bottles and other materials that takes water from point A to point B. Add an item of plastic waste to the course and have a race to see which course carries the waste item the fastest. Experiment with waste items of different weight and texture to see if this changes the rate at which they travel through the course.

Water pollution: Use a large glass bowl or aquarium and fill it with water. Explain that this represents the sea or a river. Explain that many people live around this water and use it in many different ways. Although no one intends to harm the water source, the accumulation of lots of little impacts can make a big change. Take an object such as some dirt and add it to the water, saying that this represents some soil running off a potato farm. Now add some vinegar saying that this represents some chemicals spilled on the way to a factory. Add some milk saying this represents some pesticides that ran off a cotton farm. Now add a plastic straw or bottle top saying this was accidentally littered by a visitor. Repeat with a range of ‘pollutants’ and ‘accidents’ and observe the changes to the water.

Note: A more detailed version of this activity can be found here: https://www.coolaustralia.org/activity/story-of-a-river/