

Water Cycle Terrarium

Activity Time: 40 minute class, several 10 minute daily checks thereafter.

TEACHERS: Read "Water Cycle Sensing" on page 20 of Peel Water Story book.

Objectives

Students will:

- create their own terrarium to demonstrate the water cycle
- make connections between the concepts of precipitation, condensation and evaporation
- develop inquiry skills by recording daily observations and collecting data

Introduction

To begin, start with an introduction or review of the water cycle. Discuss the various forms of water in the environment, from clouds to rain, and how they are formed through the processes of evaporation, condensation and precipitation. Once the students have a grasp on the material, hand out the two page Water Cycle Packet and go over it with the students. Following the procedure below, and begin building the terrariums.

Materials

- 5 or more jars, or clear containers (or as many as you need)
- Potting soil
- Small gravel
- Water
- Seeds (fast seeds like radish, bean or chives are best)
- Plastic wrap
- Rubber bands
- Funnel
- Computer
- Water Cycle Packet (contains Checklist and Observation Chart)

Procedure

1. Introduce the class to the water cycle and provide background on how it works and what drives it
2. Pass out Water Cycle Packet and go over the terrarium construction checklist with the students; explain that the checklist is to ensure they follow the proper procedures
3. Go over the materials and demonstrate how to properly construct the terrarium, then allow the student groups to begin constructing theirs

Terrarium Construction:

1. Place gravel at the bottom of the jar
2. Use the funnel to pour HALF of the soil into the jar
3. Sprinkle the seeds on top of the soil and cover with soil
4. Pour some water into the jar until soil is damp
5. Place plastic wrap over the top of the jar

6. Wrap the rubber band around the plastic wrap to hold it in place
 7. Place groups label on the jar
-
4. Now that the terrarium is constructed, go over the observation sheet and explain to the students what they will be looking for when they record their observations
 5. Over the next few days, take some time in class to record observations about what is going on in the terrarium with a focus on the soil's dampness, plant growth, and water
 6. After a week of observation, ask the students to remove the plastic wrap and feel the soil, but first allow them to formulate a hypothesis. The soil should still be damp, use this fact to ask some questions regarding the water cycle:
 - Why is the soil still wet?
 - Do you think the water has evaporated from the soil? Why?
 - If it evaporated, where did it go?
 - Did it ever rain in your terrarium? How do you know?
 - Is there anything in your terrarium that reminds you of a cloud or cloud drops?

Debrief

What happened in the terrarium? Why?

What did changes did you observe over the week?

How does this demonstrate how the water cycle works?

Resources

- Terrarium Checklist and Terrarium Observation Chart, see below.
- See Conservation Ontario's animated Water Cycle web page:

www.conservationontario.ca/resources/multimedia/animated_wetlands_cd/index.html

Contents of this publication may be photocopied provided the source is acknowledged on every page by including the *following Peel Water Story, Public Works Department, Region of Peel.*

Not to be adapted or reprinted without written permission of the Public Works Department of the Regional Municipality of Peel. Address: 10 Peel Centre Drive, Brampton, Ontario L6T 4B9

Terrarium Construction Checklist

Follow the list of instructions below to build your miniature terrarium. After you finish each step, have someone on your team check off the box for that step. Then continue to the next step.

- Place gravel at the bottom of the jar

- Use the funnel to pour HALF of the soil into the jar

- Sprinkle the seeds on top of the soil and cover with soil

- Pour some water into the jar until soil is damp

- Place plastic wrap over the top of the jar

- Wrap the rubber band around the plastic wrap to hold it in place

- Place groups label on the jar

Terrarium Observation Chart

Use the chart below to write in what you see each time you observe your terrarium. Begin by writing in the date each time. Ask yourselves these questions and record your observations:

- What is happening in the jar? (write or draw)
- On which part of the jar do you see water?
- Is there anything new happening in the jar?
- Other observations?

DATES	OBSERVATIONS
1. Date:	
2. Date:	
3. Date:	
4. Date:	
5. Date:	