Mini Water Cycle

Activity

Background

The hydrological cycle or the water cycle is the continuous cycling of water on Earth. Water on Earth exists in three states and it is converted from one state to the other as a result of this cyclic process. The energy for driving this whole process comes from the sun. Main components of a hydrological cycle are evaporation and transpiration, precipitation, percolation and condensation. The following demonstration, will enable students to actually observe some of the components of the water cycle.

Objective
To demonstrate and understand for oneself the working of a water cycle.

Place
Outdoor

Group size
Individual/ group

Duration
8 - 10 days to grow the vegetation cover and 2 hours for the activity

Suitable time
Daytime in enough sunlight

Materials
A transparent plastic or glass jar, fast growing seeds, soil, mug/ water sprinkler, bucket, 2 small plastic bowls, notebook.

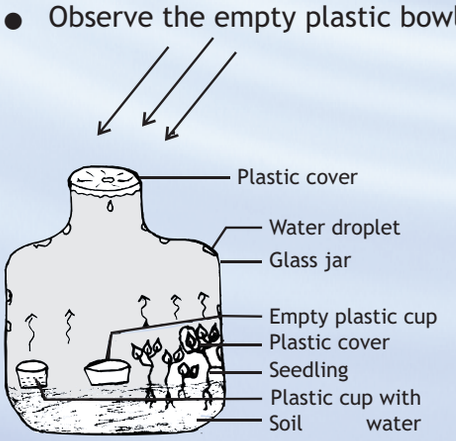
Curricular Linkages

Subject
Science and Social Science

Concept
Water Cycle

Methodology

- Take a plastic or glass jar/ box.
- Fill 3-4 cm of soil in the jar. In the soil covering one half of the jar, you could germinate some fast growing seeds (e.g. methi, ragi, fenugreek, etc). Allow the seedlings to grow for a week by which time they will attain a height of about 6 to 8 cm.
- After the germination of the seeds, you could carry out the water cycle demonstration. You could also remove a few saplings, if you do not have adequate space to carry out the demonstration described below.
- Prior to the demonstration you will have to carry out the following steps.
- In the other half of the jar (from where saplings have been removed), place a small plastic bowl containing water, this water could represent a water body.
- Also place an empty plastic bowl at the centre of the jar
- Cover the leaves of one of the saplings with a thin plastic sheet.
- You could secure the plastic sheet to the sapling by using a rubber band or a thread.
- Firmly cover the large jar with a plastic sheet. And place a small stone at the centre of the plastic sheet.
- Leave the bowl undisturbed under the sun for a few hours.
- Make a note of your observations?
- What do you see? You will note that water droplets deposit on the plastic sheet which has been used to secure the mouth of the jar.
- Where did this water come from? You will realise that this water has evaporated from the soil, from the saplings as well as from the small bowl of water placed in the jar and has condensed on the plastic sheet.
- After you have made a note of your observations, remove the plastic sheet which you have used to cover the mouth of the jar.
- Observe the empty plastic bowl that you have placed at the centre of the jar. You will note that some water might have collected in the previously empty bowl. How did the water get there? Some of the water which condensed on the plastic sheet above might have condensed and precipitated into the bowl below.
- Now examine the plastic sheet which you have used to cover few leaves of a sapling.
- You will observe that water droplets have accumulated on this plastic sheet too.
- The water on this plastic sheet is a result of evaporation and transpiration from the plants.



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