

Lesson Plans: Sunlight and Evaporation

Objective

The objective is to demonstrate that the energy from sunlight can evaporate water.

Materials

Each student or group of students will need the following:

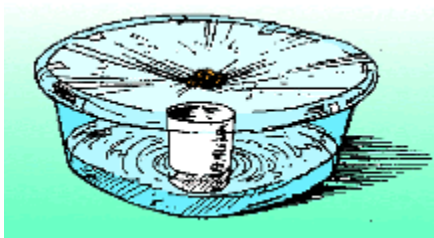
- Large bowl
- Cup
- Sheet of plastic
- String
- Water
- Small stone

Important Points to Understand

Sunlight is made up of a range of wavelengths that the human eyes see as different colors. Different wave lengths have different amount of energy. The bulk of the sun's energy received by our earth has a band of short wavelength and the energy they carry is strong enough to evaporate water.

Water vapor is the most important greenhouse gas. Like other greenhouse gases, increase of water vapor in the atmosphere traps more heat and raises the Earth's temperature, then more.

Water will evaporate into the atmosphere. The extra water vapor will add to the greenhouse effect (i.e., more water vapor in the atmosphere can trap more heat and it will make the earth warmer, and there will be more water evaporation in consequence). However, the extra water vapor may also lead to more cloud and this may have a cooling effect.



Procedure

1. Place the cup in the center of the bowl.
2. Put some water in the bowl.
3. Place the plastic sheet over the bowl and tie along the rim of the bowl.
4. Put the stone in the center of the plastic sheet, so that it is above the cup, but not touching it (as shown in the figure).
5. Place the whole set up in sunlight and watch for an hour or so.

Questions

1. What happens?
2. Can you explain why?
3. How could this be useful?