

## Measure Water Temperature at various depths

## Activity

### Background

As light energy is absorbed by water, it is converted to heat energy, which results in the warming of the surface of water bodies. Water is often layered according to temperature. This has a great influence on the ecology of water. When hot fluids are discharged into rivers, lakes or harbours or when surface pollution such as oil pollution occurs, then the natural stratification of water in the water bodies is disturbed.

### Methodology

- Students should make a bottle device and use as illustrated here.
- Students should prepare five such bottles to be able to measure temperature at five different depths.
- At an interval of every meter on the cord to which the bottle has been fastened, make a mark with water resistant paint, to indicate the depth to which the bottle has been immersed.
- Lower the bottle to the desired depth.
- Record this value to indicate the depth at which the temperature is recorded (Table 1).
- Pull the cork and allow time for the bottle to fill with water and for the temperature inside the bottle to stabilise.
- Then raise the bottle quickly, and read the thermometer at once.
- Make a note of the temperature in your notebook (Table 1).
- Repeat the process at various depths.
- Students must take all the samples at the same time for correct comparison.

Table 1: Water temperature at various depths

Sl. No.	Depth (m)	Temperature (°C)

Note: Adult supervision is advised for this activity.

### Objective:

To measure water temperature at various depths

To understand if there is any change in temperature with increasing depth

### Place

Water body

### Duration

30 min to prepare the apparatus and 1 hour for the experiment

### Group size

Individual / groups

### Suitable Time

Anytime

### Materials

Bottle, sand, thermometer, cork, cord, wire ring, notebook, pen

### Curricular Linkages

#### Subject

Geography / Science

#### Concept

Temperature stratification in water bodies

