

MINI ECOSYSTEM IN A BOTTLE

Mini Ecosystem in a Bottle

Objective:

Students observe the water cycle inside a closed ecosystem and understand how water moves in nature and how plants and small organisms depend on it to survive.



Materials:

- A clear plastic or glass bottle/jar with a lid
- Soil and small pebbles
- Small plants or grass
- Water
- Small insects or worms (optional)
- Scissors or a spoon for placing the materials



Procedure:

1. Place a layer of pebbles at the bottom of the bottle for drainage.
2. Add a layer of soil on top of the pebbles.
3. Plant the small plants and, if desired, add insects or worms.
4. Pour in a little water – just enough to make the soil moist but not flooded.
5. Seal the bottle and place it in a sunny spot.
6. Observe daily: notice how moisture forms on the walls (condensation), how water moves through the soil, and how the plants grow.

Discussion:

- What changes do you observe inside the bottle?
- How does the water move?
- What role do plants and insects play in the ecosystem?
- How is this similar to the water cycle in nature?



We learn that:

- Water is constantly moving through evaporation, condensation, and collection.
- Plants and organisms depend on water to live.
- Nature functions as a closed and sustainable system.