

CHAPTER 10

RESPIRATION IN ORGANISMS

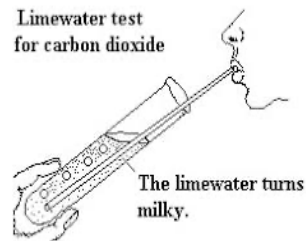
CLASS: VII

HAND OUT(MODULE (2/2)

To test the presence of carbon dioxide gas in exhaled air:

How would you show that exhaled air has carbon dioxide?

Limewater can be used to detect **carbon dioxide**. If **carbon dioxide** is bubbled through limewater then it turns from clear to cloudy/milky in colour. This is why limewater used in a simple respirometer can **show** that more **carbon dioxide** is present in **exhaled** air compared to **inhaled** air.



Breathing in other organisms

- Many animals have just cavities in their bodies just like human beings for example lions, elephants, goats, cows, snakes and birds.
- **Breathing in cockroach:**
 - Many insects like Cockroaches have small openings called spiracles present on the sides of the bodies.
 - Also, they have an air tube-like structure called the trachea that allows the exchange of gases in these insects.
 - The air enters the body through the spiracles and diffuses in the cells via the trachea.
 - Similarly, the air from the cells enters the trachea and moves out of the body through spiracles.

- **Breathing in earthworms:**

- Earthworms have a soft, slimming and moist skin.
- frogs also have a slippery and moist skin that can help in breathing. However, frogs contain lungs too.

- **Breathing underwater**

- Animals that live underwater have special respiratory organs called gills.
- They are a comb-like structure present on the skin of these animals.
- Gills allow the exchange of gases between animals and the water easily.
- Some animals called the amphibians can breathe on land by lungs and through moist skin under water. For example frogs and toads.

Respiration in plants

1. We know that plants also respire. They take in the carbon dioxide present in the atmosphere and use it in the process of photosynthesis to produce food. As a result of photosynthesis in plants, they release out oxygen in the environment.

2. All the parts of the plants can independently respire that is they can take in the carbon dioxide and release oxygen on their own.

3. The leaves of the plants have stomata present upon them which are small pore-like structures. They allow gases exchange in leaves.

4. The woody stems of the plants also respire. This is because of the presence of special tissue called Lenticels. The cells of this tissue have large intercellular spaces. They exist as dead cells on woody plants and roots and allow the exchange of gases.

Lenticels in plants

5. The roots of the plants have hair-like structures on them. Hence they can absorb the air present in the soil.

Why plants can die if overwatered?

- We know that the roots get oxygen from the soil.
- Air in the soil is present between the soil particles.
- If we over-water the plants the spaces between the soil particles get clogged the roots will not be able to get enough air and the plant can die.

