

Respiration In Living Things

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Breathing is a sign of life. All living things breathe. Breathing is a process in which the air, rich in **oxygen**, is taken inside the body and the air rich in **carbon-di-oxide** is given out as waste. Energy is needed for doing all sorts of activities. Respiration is needed to release energy from the food we eat.

RESPIRATION

During the process of breakdown of solid food, the stored energy is released and carbon-di-oxide is also released. This process is called **respiration**. Both plants and animals respire. Different animals respire in different ways.



Earthworm



Whale is a lung breather



Fish



Spiracles and air-tubes for breathing



Tadpole in water



Frog in water

BREATHING IN PLANTS

Plants breathe through the small openings in their leaves called **stomata**. The tiny roots and the root-hair of plants also breathe in **oxygen** and give out **carbon-di-oxide**. Germinating seeds also breathe in air and breathe out **carbon-di-oxide**.



Test your Self

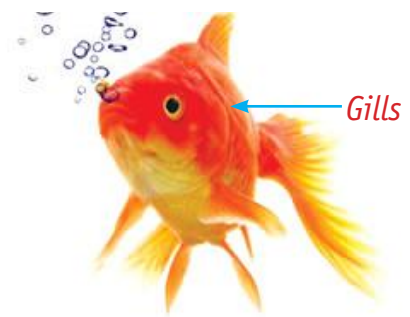
1. Define stomata.
2. Is germinating seeds breathe ?

BREATHING IN ANIMALS

Different animals breathe in different ways. Like plants, animals also breathe in **oxygen** from the air and breathe out **carbon-di-oxide**.

Fish breathe through Gills

Fish breathe through gills. The gills of a fish do the same job as the lungs of a land animal. A fish opens its mouth and a flap moves on the side of the mouth. This flap covers the gills of the fish. A fish thus breathes through its gills. Water enters into the mouth of the fish and passes out through the gills. Oxygen that is dissolved in water, passes through the gills into the fish's blood. Carbon-di-oxide passes out of the fish's blood into the water as it washes over the gills. The water leaves the fish's body through the gill-cover along with carbon-di-oxide.



Mosquito breathes through Air-tubes

The young mosquito, called a **wiggler**, lives in water and breathes in air from the surface of the water through special air-tubes. If you sprinkle kerosene over the water, the wiggler cannot breathe and dies.

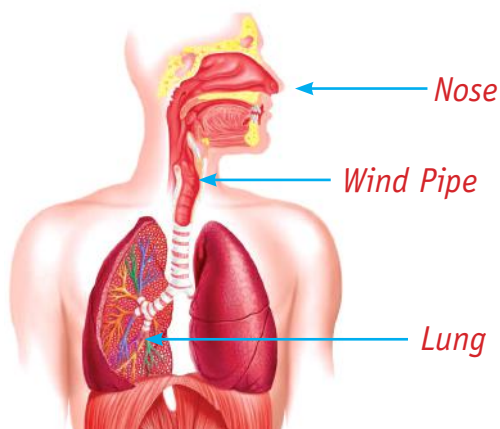
Frog breathes through both Skin and Lungs

A tadpole, the young child of the frog, lives in water and breathes through gills like a fish. The frog lives both in water and on land. It is called an **Amphibian**. When in water, the frog breathes through its skin. Its skin takes in oxygen dissolved in water through its pores. While on land the frog breathes through its lungs.

An **earthworm** takes in oxygen from the water that is present in moist soil in which it lives. It breathes through its skin.



Land Animals and human breathe through Lungs



All land animals breathe in oxygen present in the air through their lungs. Cows, dogs, monkeys and human beings breathe through lungs. Lungs are spongy baglike organs. All land animals have two lungs. Man also has two lungs. Oxygen passes from the air into the blood through the thin, spongy walls of the lungs. Carbon-dioxide passes from the blood into the lungs from where it is breathed out. Hence, when you blow into a glass full of lime water, it turns milky due to carbon-di-oxide present in your blow.

Animals need oxygen to burn their food and release energy to work and play.

Test your Self

1. How do wriggler breathe ?
2. Why do animals need oxygen?
3. Name an example of Amphibian.



Know the Keywords :

- Gills : They are used by fish to breathe under water.
Amphibian : Animals that live both on land and in water.

Point to Remember

- Different animals have different breathing organs like lungs, gills, spiracles.
- The process of taking in oxygen and giving out carbon-di-oxide is called breathing.
- Aquatics breathe through gills.
- Insects breathe through air-tubes.
- Frog breathes through both skin and lungs.

EXERCISE TIME

A. Multiple choice questions (MCQs).

Tick (✓) the correct option :

1. Reptiles breathe through :

a. Gills

b. Lungs

c. Water

2. Who breathe through gills?

a. Aquatics

b. Human beings

c. Birds

3. Who breathe through air tubes?

a. Animals

b. Insects

c. Human beings

4. Plants breathe through :

a. Gills

b. Water

c. Stomata

B. Tick (✓) the correct and cross (X) the incorrect ones :

1. Trees breathe through leaves.

2. Tadpoles breathe through lungs.

3. Cows breathe through lungs.

4. All land animals have two lungs.

5. Animals in water breathe through gills.

C. Fill in the blanks :

1. We exhale _____.

2. We breathe through _____.

3. Fishes breathe through _____.

4. Carbon-di-oxide turns lime water into _____.

5. Wrigglers breathe through _____.

D. Answer the following questions :

1. What is respiration?

2. How do plants breathe?

3. How do fish breathe?

4. How do frogs breathe?

5. How do human beings respire?



Creative Work

- Do the following activities and record your breathing per minute in each activity :
 1. Walking slowly
 2. Walking fast
 3. Running
- Light a matchstick. See what happens ?