



CLASS :6

Subject: BIOLOGY

Date:17 /06/2020

Topic: Adaptation

Time Limit: 40 Mins

Worksheet No. 11

Children in the notes given in previous worksheet we have discussed about adaptation in desert habitat and Mountain habitat. So, today our learning objectives will be **Adaptation in Aerial plants and animals.**

Instruction:- (a) Please open the video link to learn and understand about aerial adaptation in birds.

https://youtu.be/Z_4a7OYZISs

(b)This is another video link provided to learn and understand about aerial adaptation in plants

https://drive.google.com/file/d/1z8sWqlfijk_1NdVrWiEC6yZMO8Jcvmqb/view?usp=sharing

Air Adaptation in birds for flight

As we already know that the bodies of birds are adapted for flying. Some adaptive features of birds for flight are as follows:-

- The bones are light and hollow to make the body lightweight.
- A rigid skeleton that provides for a powerful flight muscles.
- A streamlined body that offers minimum resistance against air.

- The forelimbs are modified into wings.
- The long flight feathers and tail help in balance steering during flight.

The birds show two types of flight:- flapping flight and gliding flight.

- **Flapping flight**:- In this type of flight the wings move up and down. These upstroke and down stroke movements are brought about by powerful breast muscles of the bird.
- **Gliding flight**:- In this type of flight the birds stretch their wings and do not flap them. In this way they deflect air downward causing a lift force that holds the bird up in the air.

Adaptation in Aerial Plants

Aerial plants usually take their nutrients from the surrounding atmosphere and their roots usually grow above the soil and are known as **aerial roots**. These roots serve different purposes such as for support, for breathing, for getting nutrients and also for propagation.

Roots for Support:-

- **Prop Roots**:- These roots grow vertically downward from the horizontal branches of stem and become thick pillar like to provide additional support to the plant. Example, hanging roots of Banyan tree.
- **Stilt Roots**:- These are aerial adventitious roots which grow from the lower part of the stem and fix the plant firmly into the soil. Example, stilt roots of maize and sugarcane
- **Climbing roots**:- Some weak stems as that of Money plant grow clusters of aerial roots from the nodes and internodes to support the plant to climb upward. Such roots are called Climbing roots.

Breathing Roots:- These roots are found in Mangrove which grow in marshy or waterlogged areas where the roots do not get enough oxygen. That is why cone shaped roots come up above the ground. They have small pores called lenticels through which they can take oxygen from the atmosphere. Such roots are also called **pneumatophores**.

Parasitic Plants:- These plants live on other plants to get nutrients through sucking roots called **haustoria**. Plant that provide nutrient is the **host** and the plant that get nutrient is called the **parasite**. Example- Dodder.

[Copy the questions and solve them on a sheet of paper date wise. Keep the worksheets ready in a file to be submitted on the opening day] Go through the notes properly before you attempt to answer the questions.

Q1) Answer the following questions:-

1. Why the birds have light bones?
2. How can parasitic plants get their nutrients?
3. What are pneumatophores?
4. How is the body of a bird adapted for flight?
5. Define the following:-
 - Prop Roots

- Stilt Roots
 - Climbing Roots
6. Define Flapping flight and Gliding flight