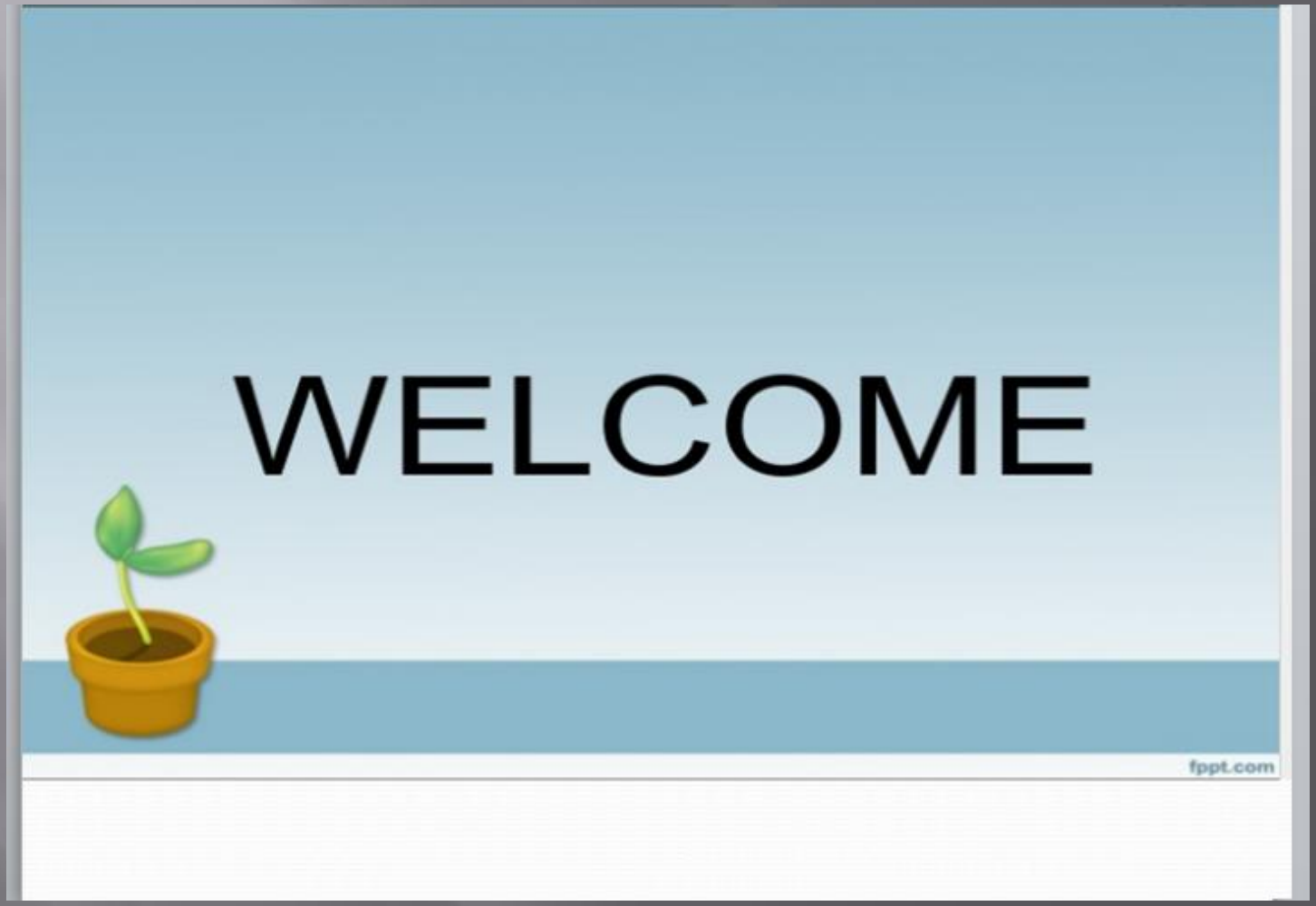
Pakistan School
Kingdom of Bahrain

BIOLOGY. 10TH



OBJECTIVES OF THE LESSON

- At the end of this lesson students will be able to learn

- How do the different parts of the plant body exchange gases with the environment?

CH. 01. GASEOUS EXCHANGE

General Introduction

A. Cellular respiration. Organisms get the oxygen needed for cellular respiration,from their environment and provide it to their cells.The carbon dioxide produced during cellular respiration is taken out of the cells and ultimately from the body.Taking in oxygen and giving out of carbon dioxide is termed **as gaseous exechang.** The term **breathing** is used for the process through which animals take air in their bodies to get oxygen from it and then give out the the air for getting rid of carbon dioxide.

Topic.1.
Gaseous Exchange In Plants

- Plants have no organs or systems for the exchange of gases with the environment.Every cell of the plant body exchanges gases with the environment by its own.

Gaseous exchange in plants

- Plants have no organs or systems for the exchange of gases with the environment.However there are following different ways by which plants exchange gases with the environment.
- **Stomata**.
- **Lenticels**.
- **Diffusion through general body surface.**
- **Aquatic environment**.

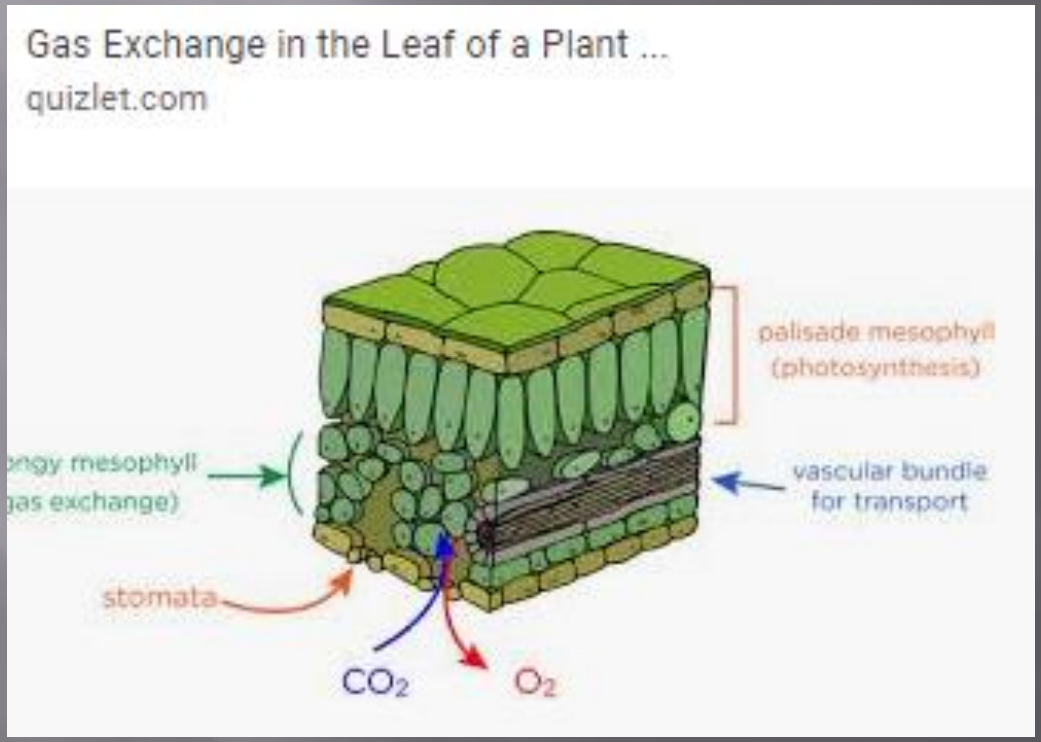
1.Stomata

- The leaves and young stems have stomata in their epidermis.The gaseous exchange occurs through these stomata.The inner cells of leaves and stems also have air spaces which help in the exchange of gases.

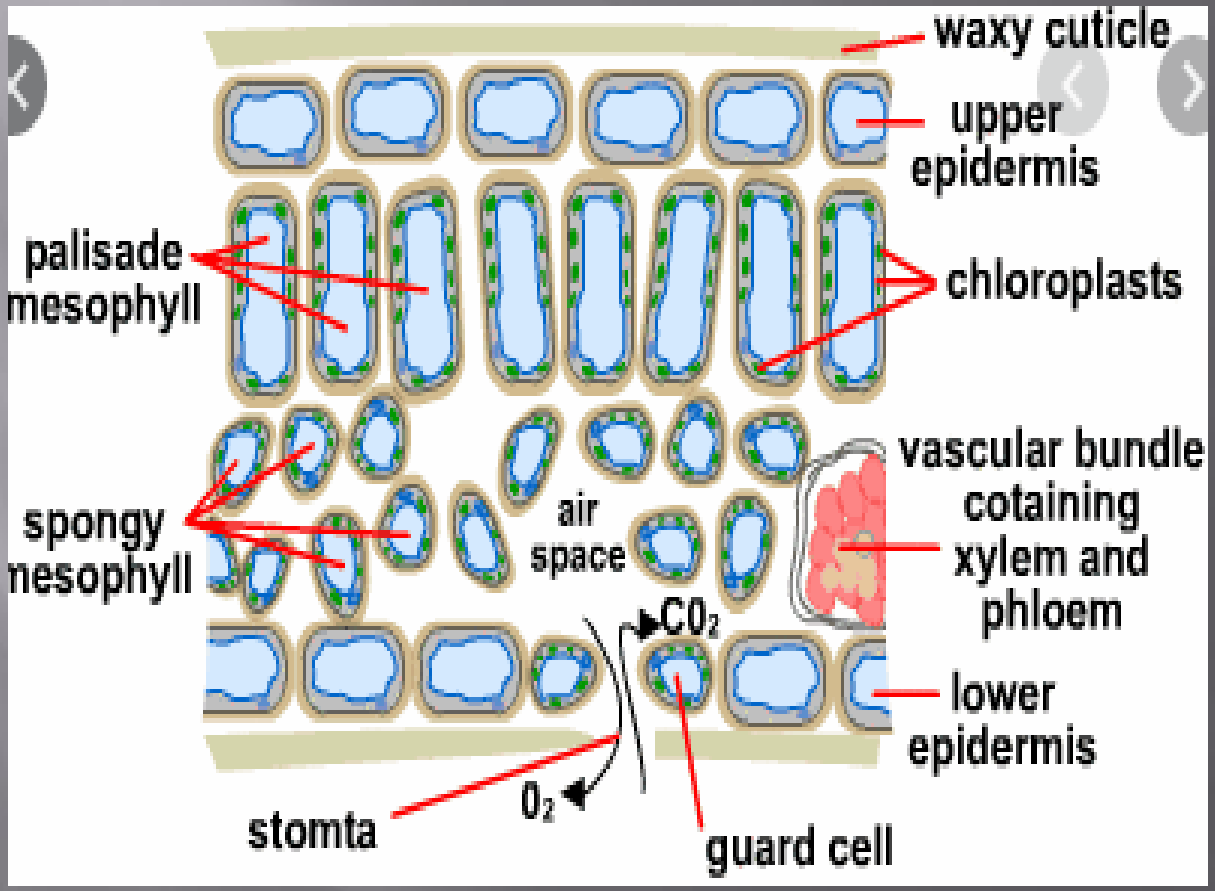
2. Lenticels

- In woody stems and mature roots the entire surface is covered by bark which is impervious to gases or water. There are certain pores In the layer of bark these are called lenticels. The lenticels allow air to pass through them.

Gaseous exchange in a leaf



Internal structure of a leaf



3.Diffusion through general body surface.

- **Gases diffuse in and out of the general surface of the young roots. The gases are found in the soil surrounding the roots.**

4. Aquatic environment

- **The aquatic plants get the oxygen dissolved in water and release carbon dioxide in the water**

Activity. 1.

Give short answers of the following.

i. Define breathing.

ii. What is cellular respiration?

iii. Can you differentiate between breathing and cellular respiration?

iv. How will you differentiate between a stoma and a lenticel?

Activity. 2.

- **Fill the blanks.**

i. Most of the gaseous exchange in a leaf occurs through----------.

ii. Lenticels are present----------.

iii. In aquatic environment plants get the oxygen ----------in water.

iv. In ----------respiration oxygen is used.

Closure

- Today we have done the topic ----------.Now we can define stomata---------and lenticels----------.
- In aquatic plants get ----------dissolved in water.

Homework

- Draw diagram of stomata of a leaf idicating the movement of gases.

- Search on net to differentiate between aerobic and anaerobic respiration.