



Class VII - CHAPTER:- Nutrition in Plants

GUIDELINES:

Dear Students

- Refer to the following content of the Chapter : Nutrition in Plants.
- Make a new notebook of Science.
- The notes will help you understand the concept of the lesson and complete the assignment that follows, which will be graded on submission.
- Chapter Link - <http://www.ncert.nic.in/textbook/textbook.htm?gescl=1-19>

SUB-TOPICS:-

- Introduction
- Mode of nutrition in plants
- Introduction to photosynthesis

Introduction: All living organisms such as plants and animals require food. So food is essential for all living organisms.

Organisms need food (nutrients) to

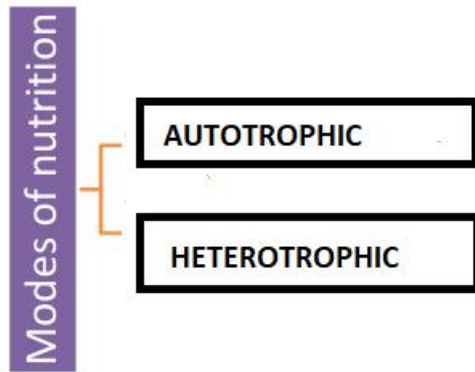


- Plants are capable of making their food themselves but humans and animals cannot.
- Carbohydrates, fats, proteins, vitamins and minerals are essential components of food, these components are called **Nutrients**.

Mode of nutrition in plants -

- Plants prepare their food by using raw materials like water, carbon dioxide and minerals.

- The process of utilization of food by a living organism to obtain energy is called **Nutrition**.
- There are two modes of nutrition as shown below in the figure:



1. **Autotrophic:** - In this mode of nutrition, organisms make their food themselves from simple substances. All green plants are Autotrophs (Auto means self and trophos means nourishment)
2. **Heterotrophic:** - Heterotrophic organisms are those who obtain food from other organisms. Since these organisms depend on other organisms for their food, they are called heterotrophs/consumers. All animals and non-green plants come in this category. (heteros = other).

Kindly refer to the link shared below for better understanding of difference between auto/ heterotrophs.

https://www.youtube.com/watch?v=GBrhEwKuu_U&t=281s

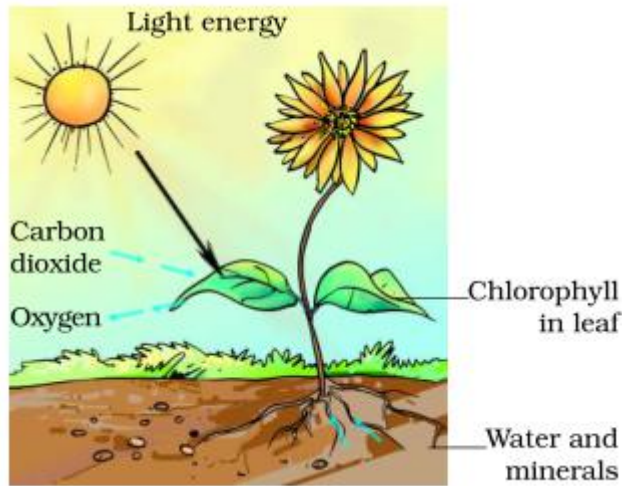
Photosynthesis: Introduction

- Photosynthesis is food making process in plants from simple substances like carbon dioxide and water in the presence of sunlight.

The process by which green plants make their own food (like glucose) from water and carbon dioxide in presence of sunlight and chlorophyll is called **photosynthesis**.

- Oxygen is released during photosynthesis.

The process of photosynthesis can be represented as:



- The process of photosynthesis takes place in the green leaves of a plant.
- The food is prepared by the green leaves of a plant in the form of a simple sugar called glucose.
- The extra glucose is changed into another food called starch. This starch is stored in the leaves of the plant.
- The green plants convert sunlight energy into chemical energy by making carbohydrates.

Kindly refer to the link shared below for better understanding of process of photosynthesis.

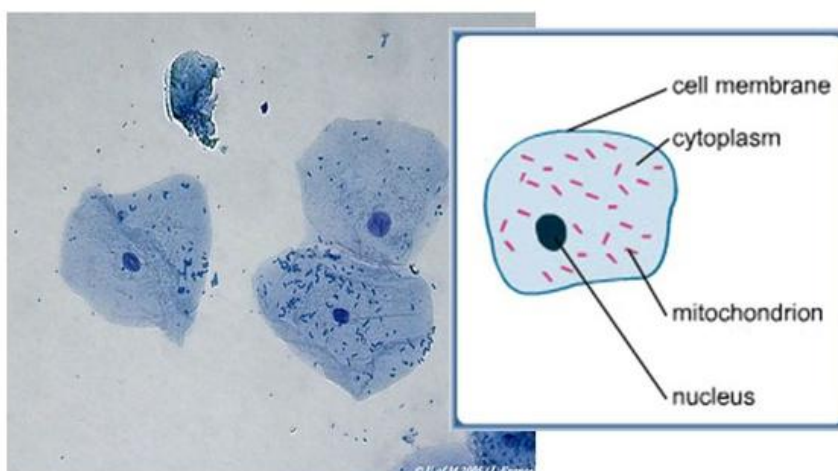
<https://www.youtube.com/watch?v=zKqBsNLc8DM>

Some important terms :

Cells

Cells are tiny units that help make up a living organism. Hence they are also called *building blocks* of an organism.

Cheek cells



- A cell is constituted of three major parts :
- A thin outer layer called the **cell membrane**.
- A spherical structure located at the centre of the cell called a **nucleus**.

- A jelly-like substance that surrounds a nucleus called the **cytoplasm**.

Chloroplasts

- **The chloroplast** is a type of organelle that exists in plants.
- These organelles contain *chlorophyll*, the green coloured pigment that is responsible for carrying out the process of photosynthesis in plants.

Chlorophyll

- **Chlorophyll** is the pigment that is responsible for the synthesis of food in green plants.
- This pigment is of green colour and is abundantly found in leaves.
- Chlorophyll is locked inside the chloroplast.

- **Assignment:**

Q1. Multiple Choice Questions:

1. Organisms which prepare food for themselves using simple naturally available raw materials are referred to as

- heterotrophs
- autotrophs
- parasites
- saprophytes

2. In the absence of which of the following will photosynthesis not occur in leaves?

- Guard cells
- Chlorophyll
- Vacuole

3. Which of these is/are necessary for photosynthesis to take place?

- a- Carbon dioxide b-Chlorophyll c-Water d-All of these

Q2.Fill in the blanks:

- Green plants are called _____ since they synthesize their own food.
- A spherical structure located at the centre of the cell called a _____ .
- During photosynthesis plants take in _____ and release _____.
- During photosynthesis _____ energy is captured by the leaves and stored as food.

Q3. Short answer Questions:

Q1. Distinguish between autotrophs and heterotrophs in two points.

Q2.What are nutrients? Give some examples.

Q3. "Food is essential for all the living organisms". Justify the statement by giving suitable explanation.

Q4. List the raw materials needed by a plant to produce food.

Q5. Give reason:

- (i) Leaves are also called the food factories of a plant.
- (ii) Sun is said to be the ultimate source of energy.

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