Class 7
Revision assignment

checking previous knowledge of class 6 based on chapters
(sources of food, components of food, living organisms and their surroundings)

Q1. Tick the correct answer.

i) The parts of plants that can be eaten are called
   a) Edible b) non-edible c) stem d) leaves

ii) The underground stem we eat as a vegetable is
   a) Carrot b) cauliflower c) wheat d) potato

iii) Animals that only eat plant and plants product are called
   a) Omnivores b) carnivores c) herbivores

iv) A food item turns blue- black when iodine is added to it, it confirms the presence of
   a) Proteins b) fats c) starch d) water

Q2. Fill in the blanks:

i) _____ and _____ mainly provide energy to our body.
ii) _____enable a plant or an animal to live in its surroundings.
iii) Dietary fibres are also known as _____.
iv) _____ makes up about 70% of our body weight.

Q3. Match the following:

Column I	**Column II**
a) Eating junk food	• Is good for health
b) Lack of iron in diet	• goitre
c) no fibre in diet	• obesity
d) lack of iodine	• constipation
e) drinking milk	• anaemia

Q4. Unscramble the given words below to get the correct word using the clues given against them.

a) RETECOXNI waste products are removed by this process.
b) LUMISIT all living organisms respond to these.
c) ROUCDPRENTOI because of this we find organisms of same kind.

Q5. Which vitamin is not present in milk?
Q6. All living organisms require food, why?
Q7. Why do desert snakes burrow deep into the sand during the day?

CLASS - VI

CHAPTER -2 COMPONENTS OF FOOD

INTRODUCTION:-

Food is required for our good health, maintenance, growth and development. Food contains several kinds of substances or constituents. Each one is important for some functions or the other. These food constituents which are needed by us for our growth and maintenances are called nutrients. The essential nutrients are:-

1. Carbohydrates
2. Proteins
3. Fats
4. Vitamins
5. Minerals

WHY DO WE NEED FOOD?

For the proper growth of the body.

To provide energy for various body functions and to perform various activities like walking, talking Running etc.

For the repair of damaged or injured body parts.

To protect against diseases and infections.

CLASSIFICATION OF FOOD

1. Energy giving food:- Carbohydrates and fats which produce energy in our body.
2. Body building food;- Proteins which are required for growth repair of the body.
3. Protective food:- Vitamins and minerals which help to perform necessary activities of life and fight diseases

1. CARBOHYDRARES;- These are main sources of energy for our body. Therefore foods rich in carbohydrates are called energy giving foods. Plants are the main source of carbohydrates.

Eg. Bajra, Potato, sugar, rice, wheat, glucose, honey etc. are the main source of it.

Activity to test the presence of starch in a food sample.

Things needed:- Raw potato, iodine solution and a dropper.

Method:- Take a piece of raw potato and put a few drops of dilute iodine solution on its cut surface using a dropper.

Observation:- When we add dil. Iodine solution to the cut raw potato, a blue black colour appears where the iodine drops fall. This shows that the potato contain starch.

2. PROTEIN:- Food rich in protein are called body building food. These are necessary for the growth and repair of the body. That is why growing children, pregnant women and people recovering from illness need more protein in their diet.

SOURSES: - It can be obtained from both plants and animals.

Plant sources:- Cashew nut, ground nut, almond, beans, soya bean, pear, pulses

Animal sources:- Fish, egg, milk, cheese etc.

Activity:- To test the presence of protein in a given food sample

Things needed:- Boiled egg/white part, copper sulphate solution, caustic soda solution, test tube, dropper, beaker.

Method:- Take piece of white part of an egg in a test tube. Use a dropper to add two drops of copper sulphate solution and ten drops of caustic soda solution to the test tube. Shake the test tube well and allow it to stand for few minutes.

Observation:- The content of the test tube turn violet. The violet colour indicate the presence of protein in the boiled egg.

3. FATS:- Fats give us more energy than carbohydrates. Foods rich in fats are also called energy giving foods. Excess of fat is deposited in the body, beneath the skin.

Sources:- We get fat from animals and plants.

Plant sources:- Nuts, seeds, of mustard, sunflower, coconut oil etc,

Animal sources:- Milk, cheese, butter, ghee, egg yolk and meat,

Activity:- To test the presence of fat in a food sample.

Things needed:- Peeled ground nuts and a piece of clean paper.

Method:- Take some peeled ground nuts, wrap them in a piece of clean paper and crush it. Take care that paper does not tear. Remove the crushed ground nut and straighten the paper. Hold the paper against a light source.

Observation:- We can see an oily patch on the paper. This patch shows that the presence of fat in the given food sample.

4. VITAMINS:- Vitamins are essential nutrients required in small quantities for normal functions of the body, The foods rich in vitamins are called protective foods. These are of different kinds. Each vitamin occur in a particular kind of food and perform a specific function.

Vitamins	Sources	functions
Vitamin –A	Green leafy vegetables, carrots, fish liver oil	Maintain healthy eye sight Proper growth, healthy skin
Vitamin -B	Green vegetables, egg, milk Whole, cereals	Helps in proper functioning of the heart ,nerves, muscles
Vitamin- C	Amla, citrus fruits, tomatoes, guava	Keeping teeth, gums and joints healthy
Vitamin – D	Milk, egg yolk, fish, fish lever oil, sunlight	Helps in normal growth of bones and teeth

5.MINERALS:- Minerals are nutrients required by our body for the proper functioning, normal growth and good health. They are known as protective food.

Minerals	Sources	functions
Iron	Green leafy vegetables, legumes, spinach, jiggery, egg yolk, ground nut	Essential for the formation of haemoglobin in the blood
Calcium	Milk, cheese, egg, green vegetables, meat	Essential for the formation and hardening of bones and teeth
Iodine	Iodized salt, sea food, green leafy vegetables	Helps in the secretion of thyroid hormone

Q: 1. Answer the following:-

1. What are nutrients?
2. Why does our body need nutritious food?
3. Name three sources of carbohydrates.
4. Which mineral is necessary for the formation of haemoglobin?
5. _____are essential for the growth of young children.
6. How will you test the presence of fat in a given food item?
7. Write any five sources of proteins?
8. Butter an ghee are major sources of _____.
9. What is the function of calcium in our body
10. How will you test the presence of starch in a given food sample?

ASSIGNMENT – 1

1. _____is the fourth layer of atmosphere.
2. Acid rain is the outcome of _____
3. Weight on the moon is _____of the weight on the earth.
4. Dentists use_____ _to polish our teeth
5. _____is also called crude oil?
6. CFCs stands for _____.
7. Two methods of purifying water.
8. First woman to go to the moon,.
9. Gas used to fill hot air balloons.
10. The rock which is also called as nature's glass.

CLASS VII SUB: CHEMISTRY

CHAPTER 5 : ACIDS, BASES AND SALTS

Acids, bases and salts are the three important groups of chemical substances that are used by us in different ways, Some of the acids, bases and salts occur in nature and they can be made artificially in factories also,

Edible substances and their tastes

Substances	Taste
Lemon juice	Sour
Curd	Sour
Sugar	Sweet
Grapes	Sweet
Baking soda	Bitter
Common salt	Salty
Orange juice	Sour

ACIDS AND BASES

The word acid has been derived from a Latin word 'acidus' which means 'sour'. Thus, all sour substances like lemon juice, orange juice, unripe mango and curd taste sour. They taste sour because they contain acids in them and they can change blue litmus to red colour. The chemical nature of such substances is acidic. The acids in these substances are natural acids.

Other substances like baking soda is bitter in taste, soapy to touch and can turn red litmus to blue colour. The chemical nature of such substances are said to be basic.

Acids and their sources

Name of acids	Found in
Acetic acid	Vinegar
Formic acid	Ant's sting
Citric acid	Citrus fruits such as lemon, orange etc
Lactic acid	Curd
Oxalic acid	Spinach
Ascorbic acid (vitamin C)	Amla, Citrus fruits
Tartaric acid	Tamarind, grapes, unripe mango etc

BASES & THEIR SOURCES

Name of bases	Found in
Calcium hydroxide	Lime water
Ammonium hydroxide	Window cleaner
Sodium hydroxide	Soap
Potassium hydroxide	Soap
Magnesium hydroxide	Milk of magnesia

NEUTRAL :- A solution which is neither acidic not basic is called neutral. It doesn't show any change in colour with indicators.

Egs:- Distilled water, Sodium chloride(common salt) solution

NATURAL INDICATORS AROUND US

It is not safe to taste substances to find out if it is acidic or basic. There are some special substances that have different colours in acidic and basic medium. These substances are known as indicators. These substances change their colour when added to a solution containing an acidic or basic substance. Some naturally occurring indicators are litmus, turmeric, china rose petals. These indicators show different colours in acidic and basic media. They are used to test whether a substance is acidic or basic in nature.

1. LITMUS (A natural dye) :- A naturally occurring indicator, i.e. litmus is obtained from certain lichens and used as a dilute solution. It is available as a red and blue litmus paper. In an acidic solution, blue litmus paper changes to red. When basic solution is added to red litmus paper it turns into blue colour.
2. TURMERIC (A natural indicator);- It is a bright yellow powder obtained from a plant. It is yellow in colour. Turmeric turns red in basic colour. It is used as indicator in the form of turmeric paper.
3. CHINA ROSE:- It is a natural indicator. It is extracted from the red flowers of china rose plant with water.

ACID RAIN

The rain containing excess of acids called an acid rain. The rain becomes acidic because Carbon dioxide and nitrogen dioxide dissolve in rain drops to form Carbonic acid, Sulphuric acid and Nitric acid respectively. It can cause damage to buildings, historic monuments, plants and animals.

This happens as follows:-

Acid rain makes the water of lakes, ponds and rivers to acidic due to which fish and other aquatic animals get killed.

Acid rain eats up the leaves of the trees gradually. By loosing leaves, the trees die. Acid rain also damages crops in the fields.

It can damages the metal structures like steel bridges etc. when it falls on them.

It damages the surfaces of buildings and monuments made up of marble.

Answer the following:-

1. Which Latin word means sour?
2. Name the acid present in Ant's sting.
3. In which substance is lactic acid present?
4. Why does the turmeric stain on your clothes turns red when washed with soap?
5. Name the base present in soap?
6. In which leafy vegetable is oxalic acid present?
7. Define indicator.
8. What is the other name of vitamin C? Which is the richest source of vitamin C?
9. How can we categorize turmeric, litmus and China rose?
10. Name two edible items which contain tartaric acid?
11. Write a short note about acid rain.

Assignment – 1

Q 1. State weather the following changes are reversible or not?

1. Boiling of rice-

2. Drying of wet cloth-

3. Grinding of wheat grain into floor-

4. Peeling of potato-

5. Stretching a rubber band –

6. Switching on lighting bulb –

7. Changing of milk into paneer –

8. Melting of chocolate –

9. Opening a book –

10. Warming milk –

11. Growing of a child into adult-

12. Burning of paper –

Q 2 Write any five examples of desirable and undesirable changes.

Q 3. Write any four differences between physical and chemical changes

Class VII (Biology)

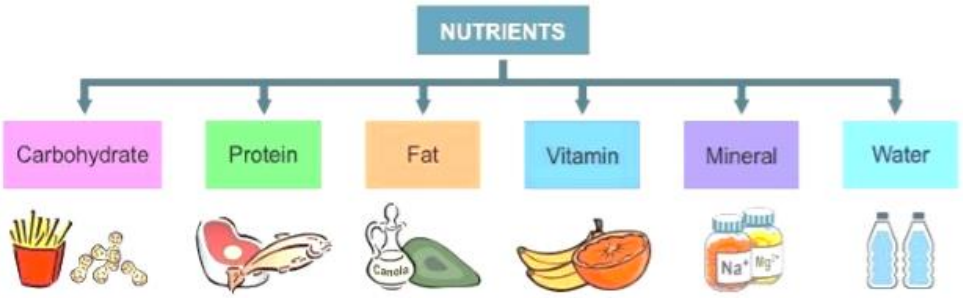
Nutrition in plants

- Living organisms such as plants and animals survive on food.
- The food gives them the energy to perform several activities in their life and helps in the growth.

Nutrients and Nutrition

Nutrients: - certain substances are present in the foods that help in the survival of the organisms. These special substances are called nutrients.
Nutrition:- nutrition can be defined as process by which organisms take in the food and utilize it in order to survive.

How many nutrients are there?
Nutrients are grouped into following six categories.



Carbohydrates and fats - energy giving food
Proteins – Body building food
Vitamins and minerals – protective food

- Some living organisms like plants synthesize their food by themselves while others such as animals depend upon the plants and other animals for their food.

Modes of nutrition in Plants

Based on the mode of nutrition organisms can be divided into two categories:

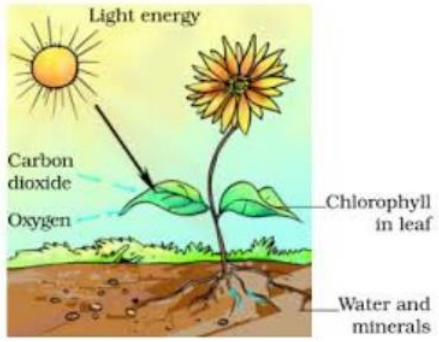
- Autotrophic organisms: They can prepare their food by themselves such as plants.
- Heterotrophic nutrition: They depend on other organisms for their food such as animals.

How do plants prepare their food?

Plants prepare their food with the help of certain raw-materials that they gather from their surroundings.

- Water
- Carbon dioxide
- Sunlight
- Minerals
- Chlorophyll

The process by which plants prepare their food by using these raw materials is called photosynthesis.

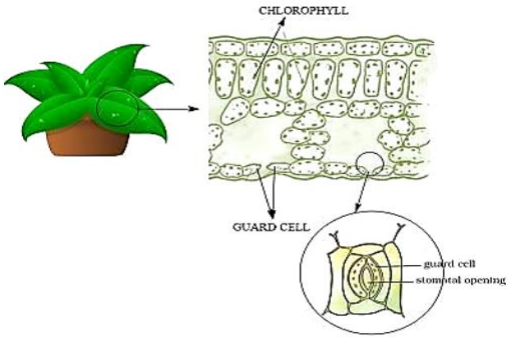


Where is food made in plants?

- Leaves are also known as the food factories of the plants as they are the places where food is prepared.
- Different parts of the plants like roots gather the raw materials from the atmosphere and then transfer them to the leaves where photosynthesis takes place.

Transpiration of water and minerals in plants-The roots of the plants absorbs the water and minerals of the soil and then transports them to the leaves via stems and branches

Inhalation of carbon dioxide- There are tiny holes or pores present on the surface of the leaves called Stomata that take in the carbon dioxide present in the atmosphere.



Presences of Chlorophyll in the Leaves - A substance called Chlorophyll is present in the leaves of the plants. It is a green colour pigment. The chlorophyll not only provides green colour to the leaves but also helps in the process of

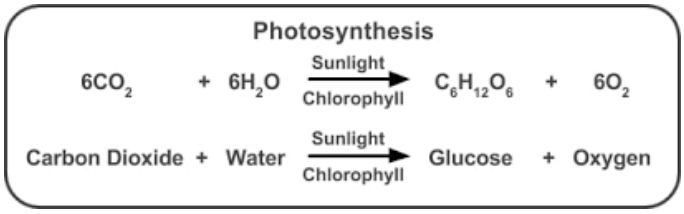
photosynthesis. Chlorophyll captures the sunlight and along with other raw materials prepares the food in the leaves.
This process of photosynthesis only occurs in the daytime in the presence of Sunlight hence it is called **Photosynthesis**, photo means light.

Why sun is called the ultimate source of energy for all living organisms?
We know that the plants use solar energy to make their food. The herbivores animals depend upon the plants for their food. Animals (carnivores) that do not eat plants depend upon the herbivorous animals. Therefore, all of the living organisms directly or indirectly receive their energy from the Sun.

Can photosynthesis take place in other parts of the plant?
Yes, green stems and branches of the plants can also undergo the process of photosynthesis. For example, plants in the desert area like cactus do not have leaves but they still exist there because their stem produces the food for the plant.

Why is the process of photosynthesis important?
There will be no food if the plants would stop conducting the photosynthesis process.
The plants take in carbon dioxide and produce oxygen during the process of photosynthesis. Hence, without this process, it would not be possible to survive on earth as they would be no oxygen.

Production of Oxygen and Carbohydrates by the Plants



Plants use carbon dioxide and water in presence of the sunlight and chlorophyll to produce carbohydrates and oxygen. The carbohydrates thus produced by the plants are converted into starch.

Algae contain chlorophyll
Algae are green coloured organisms found in the stagnant water. They get their green colour from chlorophyll. Since they have chlorophyll in them, they are capable of conducting photosynthesis.

Algae in Water

How do plants generate proteins and fats?

- Along with carbohydrates, plants can also produce proteins and fats which are formed with the help of Nitrogen.
- Nitrogen is present in large amounts in the air but plants cannot consume the nitrogen directly from the atmosphere.
- The soil often contains some bacteria that are capable of converting the nitrogen into nitrates which can be the used by the plants.
- Also, fertilizers used by farmers and gardeners contain a high amount of Nitrogen which mixes into the soil and is used by the plants.

Can leaves which are red or Brown or violet in colour conduct photosynthesis?

Yes, the chlorophyll is also present in leaves that are not green in color. They are of different colours because the other colour pigments are more than the green colour pigments in such leaves.

Nutrition in Plants that do not contain Chlorophyll

- Many plants do not contain any chlorophyll. Hence, they are unable to prepare their food by themselves. Therefore, they rely on other plants and animals for their food.

1. **Parasitic Plants** - Some plants live on another plant for their nutrition. These are called parasites. The plants on which these parasitic plants survive are called the host. For Example, cuscuta is a parasitic plant.

Cuscuta plants

2. **Insectivorous Plants** - Some plants depend upon insects for the food and thus are called Insectivorous. The leaves of these plants are modified into

a pitcher like structure. The top part of the leaves acts as a lid which can open and close the pitcher. The pitcher contains hair in a downward direction which traps the insects. The pitcher on capturing the insect secretes some digestive juices which help in the digestion of the insect. For Example, pitcher plant.

Pitcher plant showing lid and pitcher

3. Saprotrophs - Some organisms survive on decaying food and organisms. This mode of nutrition is called saprotrophic nutrition and the organisms that survive because of the saprotrophic nutrition are called Saprophytes.

How do saprophytes obtain their nutrition?

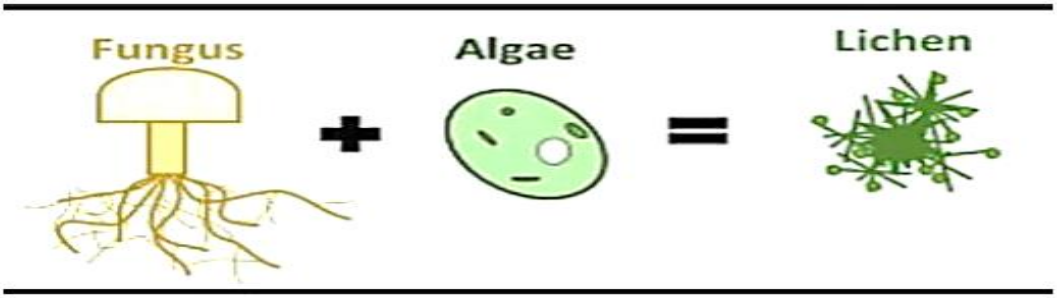
- The saprophytes secrete digestive juices on the decaying and dead matter.
- These juices convert the matter into a solution.
- The saprophytes that absorb the nutrients from the solution.

For Example, Fungi (yeast and mushrooms) are saprophytes that can be found on stale food and pickles which are exposed to the hot and humid environment.

4. **Symbiotic Relationship -** Sometimes organisms live together to share shelter and food with each other. These are said to have a symbiotic relationship.

Examples of organisms living in a symbiotic relationship:
Some fungi live in the roots of the trees. These fungi take food from the trees and in return help the trees in absorbing water and nutrients from the soil. Sometimes an organism that contains chlorophyll such as algae lives in association with a fungus (together called as Lichens). The algae provide food

and nutrition to the fungus while the fungus provides water, minerals and shelter to the algae.



How nutrients are replenished in the plants

- Fertilizers and manure are often used to replenish the soil with the nutrients. They contain potassium, phosphorus and nitrogen all of which are important for the plants.
- A bacterium called Rhizobium is present in the soil which can convert nitrogen present in it in the form that can be consumed by the plants.
- The rhizobium generally lives in the roots of the plants such as peas, beans, grams and legumes and provides nitrogen to these plants. This again is an example of a symbiotic relationship. The farmers often do not need to use fertilizers while growing such crops.

Work sheet (chapter -1)

Q1. Give one-word answer

i) Food factory of plant.
ii) The green pigment present in the leaves.
iii) Organisms that live together and share shelter and nutrients.
iv) Organisms that survive on dead and decaying matter.

Q2. Fill in the blanks:

i) Algae are _____ (autotrophs/ heterotrophs).
ii) Plants with red, brown, violet coloured leaves_____ (can / cannot) perform photosynthesis.
iii) Nitrogen is added to the soil with the help of _____ bacteria and by using ___ and _____.
iv) The plant in which photosynthesis is done by stem instead of leaves is _____.

Q3. Give examples of :

i) Saprotroph
ii) Insectivorous plants
iii) Parasitic plants
iv) Leguminous

Q4. Write the equation for photosynthesis.

Q5. Differentiate between nutrients and nutrition.

Q6. Complete the table:

Symbiotic relations	**partners**	**roles**
1. Lichens	_____& _____	i) _____ provide food to _____. ii) _____ provide shelter, water & minerals to ------.
2. Rizhobium & legumes	_____& _____	i) ____fix atmospheric nitrogen into soluble form which can be utilised by _____ ii) Legume plant provide shelter and food to _____

Q7. How nutrients are replenished in the soil?