

# CHAPTER - 2

## COMPONENTS OF FOOD

CLASS

**:- VI**

SUBJECT

**:- SCIENCE**

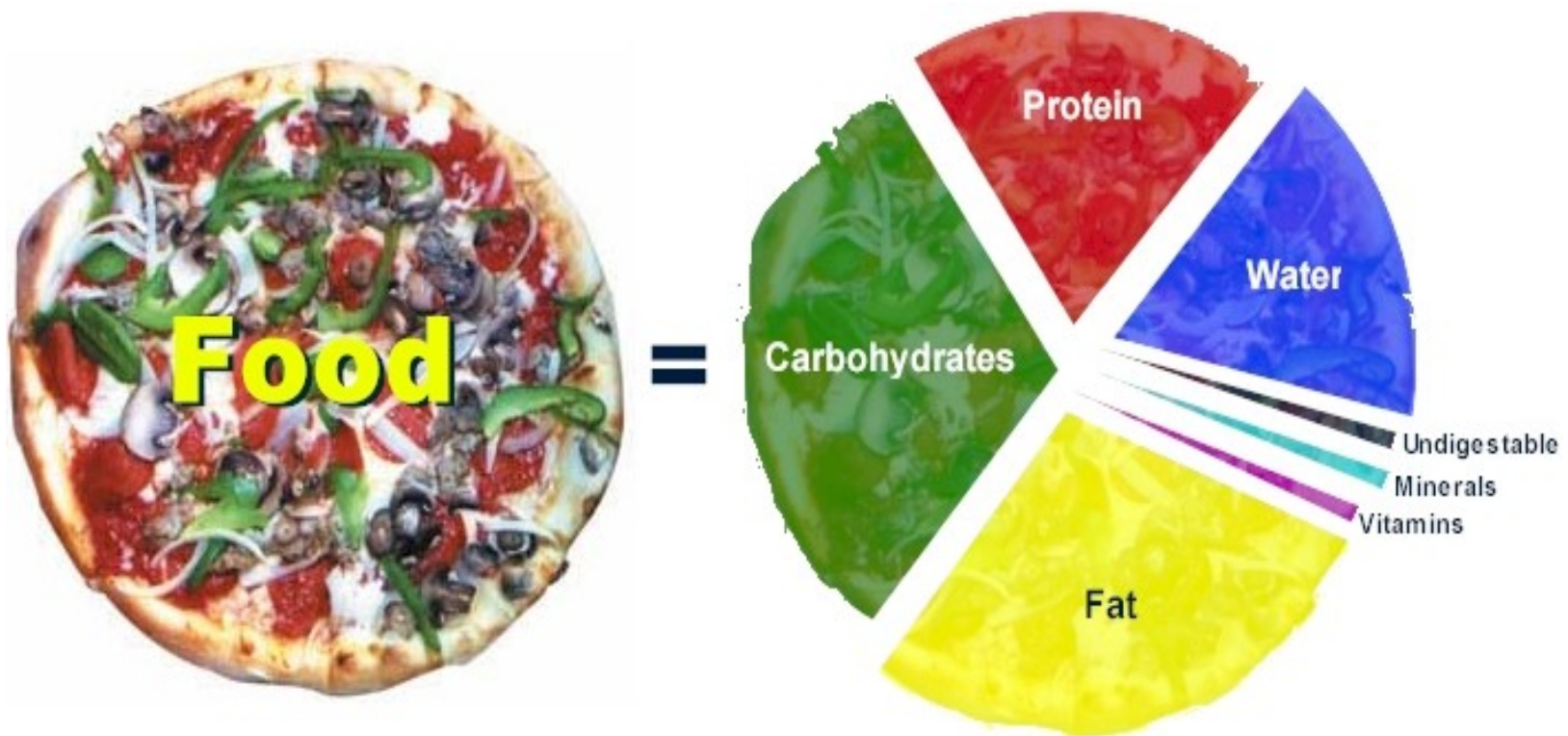
# 1) Nutrients :-

Different food items contain some components which are needed by our body. These components are called **nutrients**.

The main nutrients in our food are :-

carbohydrates, fats, proteins, vitamins and minerals

Food also contains dietary fibres (roughage) and water.



## 2) Test for carbohydrate :-

The main carbohydrates present in the food are starch and sugars.

### Activity :- Test for starch

Take a small amount of the food item in a test tube. Add 2 or 3 drops of iodine solution to it. If the colour of the solution changes to blue – black then the food item contains starch.



### 3) Test for proteins :-

**Activity**:- Take a small amount of the food item. If it is solid, powder it or make a paste of it. Then put a small amount of it in a test tube and add 10 drops of water to it and shake it. Then add 2 drops of copper sulphate solution and 10 drops of caustic soda solution to it and shake it and leave it for some time. If the colour changes to violet then the food contains proteins.



## 4) Test for fats :-

Activity :- Take a small amount of the food item. Cover it in a piece of paper. Then crush it without tearing the paper. If the paper has an **oily patch**, then the food contains fat.



## 5) Nutrients, their functions and sources :-

### a) Carbohydrates :-

Carbohydrates provide energy to our body.  
Carbohydrates are **energy giving food**.

Carbohydrates are present in rice, wheat, maize, bajra, potato, sweet potato, mango, papaya, melon etc.

Starchy foods



ADAM.



## b) Fats :-

Fats provide energy to our body. Fats are **energy giving food**. Fats give more energy than carbohydrates.

Fats are present in oil, ghee, butter, cheese milk, ground nut, coconut, meat, egg etc.

### Saturated fats

Saturated fats are found in animal products such as butter, cheese, whole milk, ice cream, cream, and fatty meats, and oils such as coconut, palm, and palm kernel oil



## c) Proteins :-

Proteins help in growth and repair of the body. Proteins are **body building food**.

Proteins are present in pulses, peas, beans, meat, fish, egg, cheese, etc.





## d) Vitamins :-

Vitamins protect our body from diseases and helps to keep our eyes, bones, teeth and gums healthy. Vitamins are **protective food**.

**Vitamin A** is present in milk, fish oil, carrot, pumpkin, mango, green leafy vegetables, etc.

**Vitamin B** is present in cereals, pulses, vegetables, fruits, liver, fish, etc.

**Vitamin C** is present in lemon, orange, amla, guava, tomato, etc.

**Vitamin D** is present in milk, butter, egg, fish, liver, etc.

### Vitamin A

Sources of vitamin A and beta-carotene:

Vitamin A comes from animal sources such as eggs, meat and dairy products

Beta-carotene, a precursor of vitamin A, comes from green, leafy vegetables and intensely colored fruits and vegetables

ADAM.

### Vitamin B1



Vitamin B1 (Thiamine) is found in fortified breads and cereals, fish, lean meats and milk

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### Vitamin C

Citrus fruits, green peppers, strawberries, tomatoes, broccoli and sweet and white potatoes are all excellent sources of vitamin C



### Vitamin D

The body itself makes vitamin D when it is exposed to the sun



Cheese, butter, margarine, fortified milk, fish, and fortified cereals are food sources of vitamin D



ADAM.

## e) Minerals :-

Minerals help in proper growth and to maintain good health. Minerals are **protective food**.

**Iodine** is present in fish, green leafy vegetables, iodised salt, etc.

**Phosphorus** is present in milk, fruits, cereals, pulses, etc.

**Iron** is present in green leafy vegetables, fruits, liver, etc.

**Calcium** is present in milk, egg, cheese, fish, meat, etc.

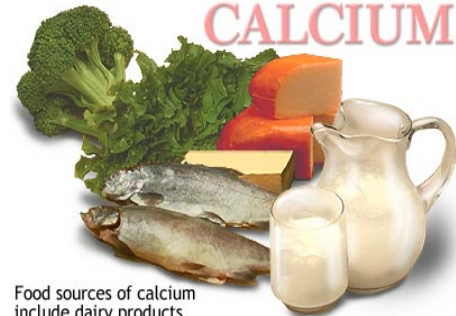


### Iron

The best source of iron is lean red meat. Iron can also be found in chicken, turkey, eggs, and cereals.



### minerals CALCIUM



Food sources of calcium include dairy products, green leafy vegetables, and salmon, and sardines

## f) Dietary fibres :- (Roughage)

Dietary fibres helps to remove undigested food from the body.

Dietary fibres are present in cereals, pulses, vegetables, fruits etc.

### Fiber

Food sources of fiber include whole wheat, bran, fresh or dried fruits, and vegetables



Soluble fiber can be found in foods such as oatbran, barley, nuts, seeds, beans, lentils, fruits (citrus, apples), strawberries and many vegetables



Soluble fiber sources



Insoluble fiber is found in foods such as whole wheat and whole grain products, vegetables, and wheat bran



Insoluble fiber sources



## g ) Water :-

Water helps the body to absorb nutrients and to remove wastes from the body like sweat, urine etc.

Water is present in vegetables, fruits, milk, cooked food, juices, tea, coffee, drinking water etc.

Fruits and  
Vegetables



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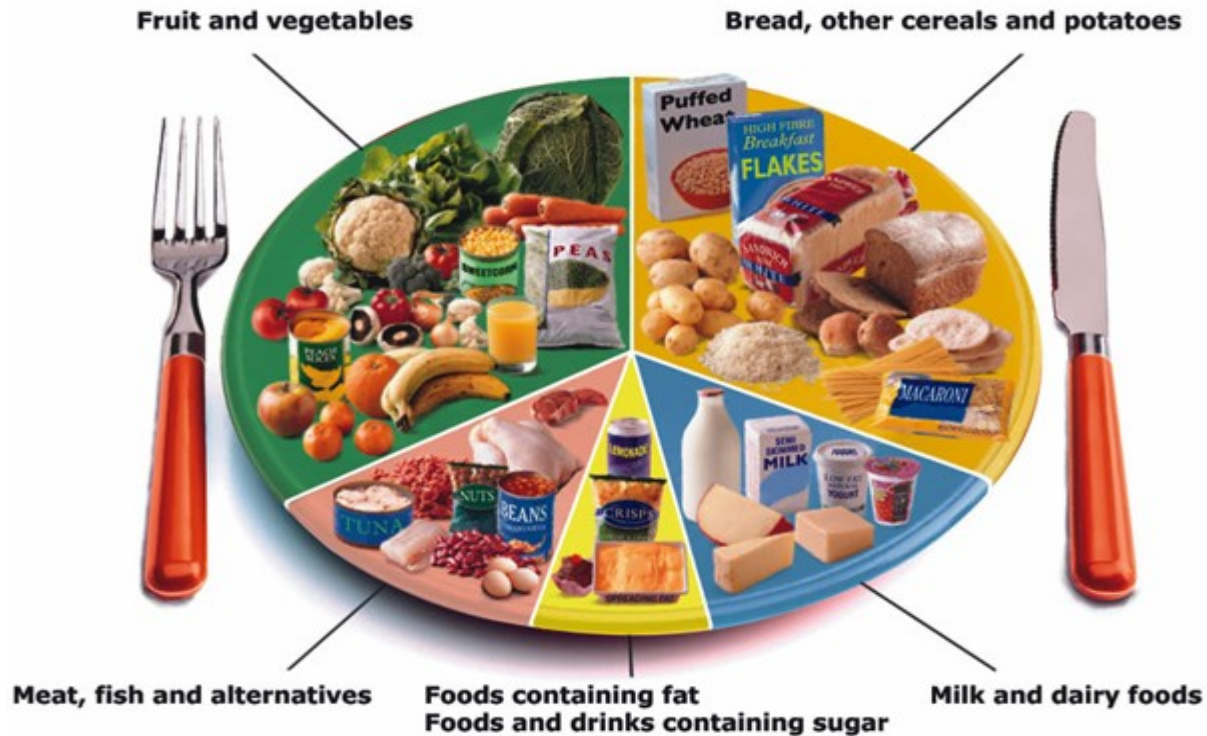


## 6) Balanced diet :-

Balanced diet is a diet which has all the nutrients that our body needs in the right quantities along with required amount of roughage and water.

If we do not take balanced diet we get deficiency diseases.

### The Balance of Good Health



There are five main groups of valuable foods

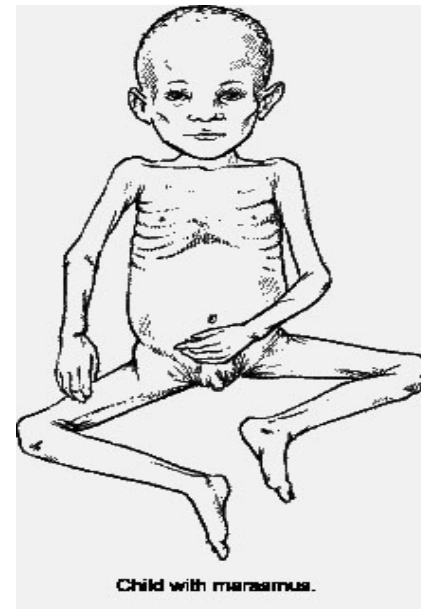
## 7) Deficiency diseases :-

Diseases caused due to the lack of nutrients for a long time are called **deficiency diseases**.

Deficiency diseases can be prevented by taking balanced diet.

If the diet is deficient in **proteins** for a long time, the person may have stunted growth, swelling face, discolouration of hair, skin diseases and diarrhoea.

If the diet is deficient in **both carbohydrates and proteins** for a long time the person becomes lean, thin, weak and may not even be able to move.



## 8) Diseases caused by deficiency of some vitamins

### and minerals :-

<b>Vitamin/ Mineral</b>	<b>Deficiency disease/disorder</b>	<b>Symptoms</b>
<b>Vitamin A</b>	<b>Loss of vision (night blindness)</b>	<b>Poor vision, loss of vision in darkness (night), sometimes complete loss of vision</b>
<b>Vitamin B1</b>	<b>Beriberi</b>	<b>Weak muscles and very little energy to work</b>
<b>Vitamin C</b>	<b>Scurvy</b>	<b>Bleeding gums, wounds take longer time to heal</b>
<b>Vitamin D</b>	<b>Rickets</b>	<b>Bones become soft and bent</b>
<b>Calcium</b>	<b>Bone and tooth decay</b>	<b>Weak bones, tooth decay</b>
<b>Iodine</b>	<b>Goiter</b>	<b>Glands in the neck appear swollen, mental disability in children</b>
<b>Iron</b>	<b>Anaemia</b>	<b>Weakness</b>

# SCIENCE

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