

Study Sheet | Lower Secondary

Stage (6-8)

1st Semester | 2023-2024

Subject: Biology

Chapter: Nutrients in food

Objectives:

- Identify the constituents of a balanced diet for humans.
- Understand why each nutrient is needed.

Name of the nutrient	Food sources	Function
<p><u>Carbohydrates</u> <i>(Broken down into simple sugars)</i></p> <ul style="list-style-type: none"> - Starch - Simple sugars 	<p>Starch is found in bread, cereal, rice, Pasta, beans, Potato.</p> <p>Glucose is found in chocolates, cakes and some fruits such as dates and bananas.</p>	<p>The primary source of energy for the body. <u>(Big molecule, needs to be digested)</u></p> <p>Simple sugars such as glucose gives a quick burst of energy. <u>(Small molecule, no need to be digested, it is absorbed directly)</u></p>
<p><u>Proteins</u> <i>(Broken down into amino acids)</i></p>	<p><u>Proteins from animal sources:</u> Meat, fish, eggs, salmon, Tuna and dairy products.</p> <p><u>Proteins from plant sources:</u> Pulses; beans, cereals, nuts and lentils.</p>	<ul style="list-style-type: none"> - Build new cells. - Control some chemical reactions in the cells.
<p><u>Fats</u> <i>(Broken down into fatty acids and glycerol)</i></p>	<p>Found in meat , fish , chicken, milk and nuts</p>	<ul style="list-style-type: none"> - Reduce heat loss from your skin. - To make cell membranes. - protect vital organs. - Stored source of energy.

Name of the nutrient	Food sources	Function
<p><u>Vitamins</u></p> <ul style="list-style-type: none"> - Fat-soluble vitamins <i>(Dissolve in fat)</i> - Water-soluble vitamins . <i>(Dissolve in water)</i> 	<p><i>Fat- soluble vitamins</i> are found in fish and dairy products. <u>Can be stored in the body.</u> e.g. vitamins A and D.</p> <p><i>Water-soluble vitamins</i> are found in fruits and vegetables. <u>Cannot be stored in the body and are therefore required daily.</u> e.g. B vitamins and vitamin C.</p>	<p>All vitamins help some chemical reactions to take place in the cells.</p> <p><u>Examples:</u></p> <ul style="list-style-type: none"> ✓ Vitamin A is involved in allowing the eyes to see in dim light. ✓ Vitamin D helps the body to take up calcium from food to make strong bones and teeth.
<p><u>Minerals</u></p>	<p>Minerals are found mostly in fruits and vegetables.</p>	<p>Minerals are needed to build different substances in your body.</p> <p><u>Examples:</u></p> <ul style="list-style-type: none"> ✓ Calcium is needed to make strong bones and teeth. ✓ Iron is used to make haemoglobin to carry oxygen in your blood.
<p><u>Fibre</u></p>	<p>Fibre is found in fruits and vegetables and also in plant leaves .</p>	<p>Fibre is very important for our intestines.</p> <ul style="list-style-type: none"> - Prevents constipation. - Helps in food digestion.

Questions:

1. State the main food types that animals consume for energy.

Carbohydrates and fat

2. Give one similarity and two differences between sugar and starch.

Similarity: both are carbohydrates

Differences:

1. Starch is a big molecule / Sugar is a small molecule.

2. Starch needs to be digested / Sugar doesn't need to be digested, it is absorbed directly.

3. Explain why animals need energy stores in their bodies.

Because they are not eating all the time so they need energy stores to release energy when not eating.