



## 8A Food and Nutrition

### 1. Nutrients

<b>Diet</b>	The food that you eat-provides the raw materials your body needs for energy.
<b>Nutrients</b>	Food substances that provide the raw materials- carbohydrates, fats, proteins, vitamins, minerals
<b>Carbohydrates</b>	Starch and sugars
<b>Fats</b>	Liquid fats are oils. Fats and oils are called lipids.
<b>Fibre</b>	Made of plant cell walls- not used by the body. Helps food move through the intestines and stops them getting blocked.
<b>Uses of Water</b>	<ul style="list-style-type: none"> <li>• a lubricant</li> <li>• dissolves substances to be carried around body</li> <li>• fills up cells, holding shape</li> <li>• sweat to cool you down</li> </ul>
<b>Food Labels</b>	Show the amounts of different nutrients in food.
<b>Starch Food Test</b>	Add 2 drops of iodine. If it turns <b>blue-black</b> starch is present.
<b>Protein Food Test</b>	Add 5 drops of biuret solution. If it turns <b>purple</b> protein is present.
<b>Fat Food Test</b>	Rub on some white paper and hold up to the light. fats will leave a greasy mark

### 2. Uses of Nutrients

<b>Uses of Carbohydrates</b>	The body's main source of energy. <i>Bread, potatoes, pasta</i>
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<b>Uses of Fats</b>	Another source of energy that is stored in your body. Some is stored under the skin to insulate the body. <i>Dairy products, fried food</i>
<b>Maintaining Mass</b>	The amount of fuel you use needs to be balanced by the amount you eat.
<b>Kilojoules (kJ)</b>	The units for measuring the energy in food.
<b>Respiration</b>	The process that releases energy from food.
<b>Energy Needs</b>	Depends on age, sex and how active you are.
<b>Uses of Proteins</b>	Make new cells allowing us to grow and repair our bodies. <i>Meat, fish, cheese, beans, milk</i>
<b>Uses of Vitamins and Minerals</b>	Used in small amounts to maintain health.
<b>Vitamin A</b>	Needed for healthy skin and eyes.
<b>Vitamin C</b>	Helps cells in tissues stick together properly.
<b>Calcium</b>	Needed to make bones.
<b>Iron</b>	Makes red blood cells.

### 3. Balanced Diets

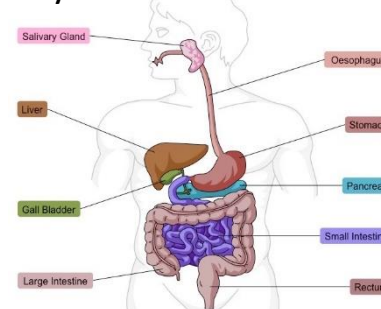
<b>Balanced Diets</b>	Eating a range of foods in the right amounts.
<b>Malnutrition</b>	Having too much / too little of a nutrient in your diet.
<b>Deficiency Disease</b>	Caused by lacking certain nutrients for a long time.
<b>Kwashiorkor</b>	Lack of protein causing a 'pot belly'.
<b>Night Blindness</b>	Lack of vitamin A.
<b>Scurvy</b>	Lack of vitamin C causing painful joints and bleeding gums.

<b>Rickets</b>	Lack of calcium / vitamin D causing bones not to form properly.
<b>Anaemia</b>	Lack of iron causing tiredness and shortness of breath.
<b>Starvation</b>	Lacking nearly all nutrients needed.
<b>Obesity</b>	Caused by eating food containing more energy than you need.
<b>Heart Attack</b>	Fat clogs arteries so little blood reaches the heart.
<b>Reference Intakes</b>	How much of each nutrient should be eaten in a day.

### 4. Digestion

<b>Digestion</b>	Turning large insoluble molecules into small soluble ones.
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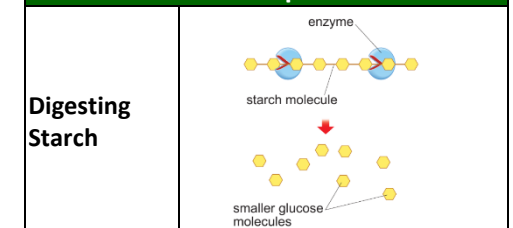
#### Digestive System



<b>Mouth</b>	Teeth grind food and saliva helps digest food.
<b>Gullet</b>	(oesophagus / food pipe) Muscles contract pushing the food down.
<b>Stomach</b>	Food churned with acid.
<b>Small Intestine</b>	More digestive juices added- small digested molecules absorbed into body.
<b>Large Intestine</b>	Water is removed from undigested food- faeces formed.
<b>Rectum</b>	Stores faeces

<b>Anus</b>	Faeces pushed out body-egestion.
<b>Gut Bacteria</b>	Microorganisms needed to help digest food.
<b>Enzymes</b>	Substances that speed up the breaking down of large molecules- biological catalysts.

### 5. Absorption



<b>Digesting Starch</b>	
<b>Blood</b>	Digested nutrients dissolve in the blood plasma and are carried around the body to cells.
<b>Diffusion</b>	Movement of particles from an area of high concentration to low concentration.
<b>Small Intestine Adaptations.</b>	Has lots of tiny finger-shaped villi to increase surface area. Each villus has a folded top that forms microvilli. Villi walls are one cell thick for easier diffusion.
<b>Alcohol</b>	Causes fewer digestive enzymes to be released and can damage villi.

Lesson	Memorised?
<b>1. Nutrients</b>	
<b>2. Uses of Nutrients</b>	
<b>3. Balanced Diets</b>	
<b>4. Digestion</b>	
<b>5. Absorption</b>	