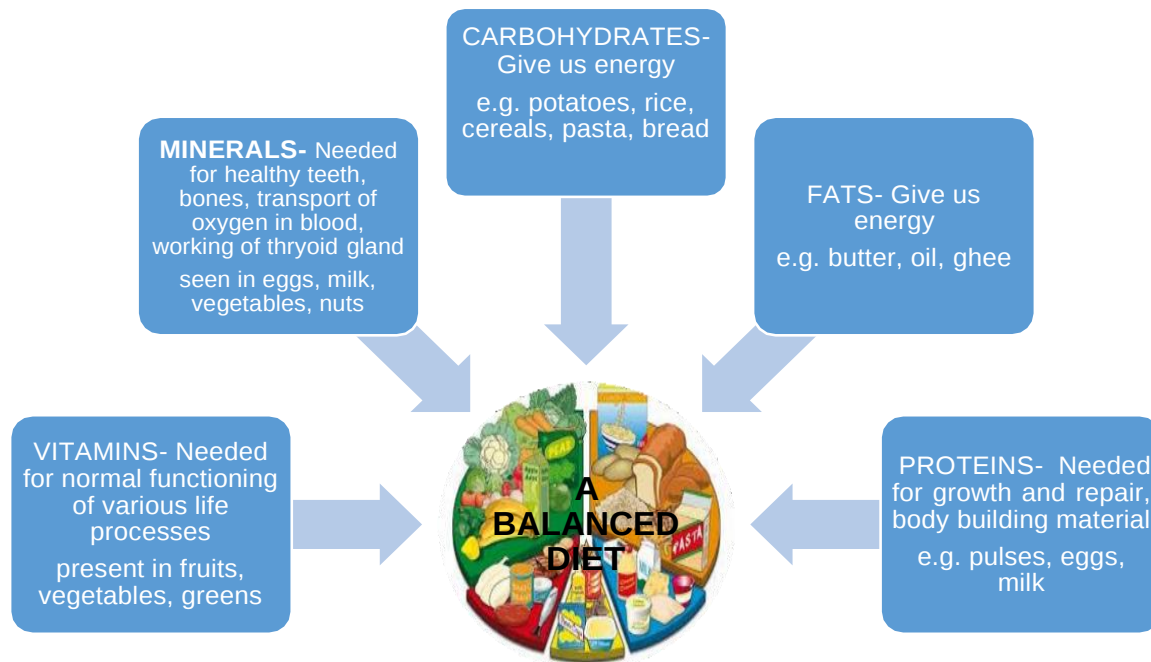


ICSE CLASS 7 BIOLOGY

NUTRITION IN ANIMALS AND PLANTS

NUTRIENTS- Substances present in food needed for energy, growth and repair in our body

We need to include all these in order to remain active and healthy. A diet which gives us the correct amount of all the nutrients we need is called a balanced diet



Daily requirement of calories is dependent on age and occupation

Due to the biological changes in the body, adolescents' caloric requirements are high.

Pregnant women require 300 calories extra per day.

Growing children need to include more protein

Athletes and people involved in hard physical work need more energy rich food

People with desk jobs need fewer number of calories than people who are active

Fast foods like burgers and pizzas and fried foods do not give us all the nutrients we need.

They are high in fat and sodium content and may lead to **obesity**

Substances which are added to food to enhance flavor are called additives

Sometimes, additives may be harmful, in which case they are called adulterants

Apart from these, we need:

WATER

- Medium for chemical changes in our body
- Transports nutrients and other materials

ROUGHAGE

- Fibrous material seen in cereals, vegetables and fruits
- Mainly consists of complex carbohydrate called cellulose
- Adds bulk to our food and prevents constipation

REMEMBER!

All foods contain varying amounts of all nutrients. We need to know what foods to include in our daily diet in order to get all the nutrients for a balanced diet

Energy obtained from food is measured in **calories**

For instance, here is the break-up of nutrient levels in one loaf of white bread

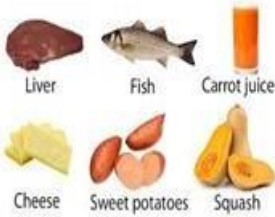
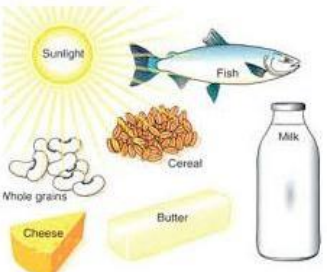
Nutrition

Typical values	100g contains	Each slice (typically 44g) contains	% RI*	RI* for an average adult
Energy	985kJ 235kcal	435kJ 105kcal		8400kJ 2000kcal
Fat	1.5g	0.7g	1%	70g
of which saturates	0.3g	0.1g	1%	20g
Carbohydrate	45.5g	20.0g		
of which sugars	3.8g	1.7g	2%	90g
Fibre	2.8g	1.2g		
Protein	7.7g	3.4g		
Salt	1.0g	0.4g	7%	6g

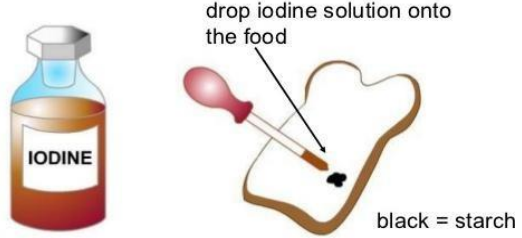
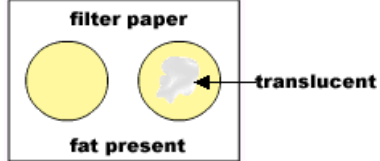
This pack contains 16 servings

*Reference intake of an average adult (8400kJ / 2000kcal)

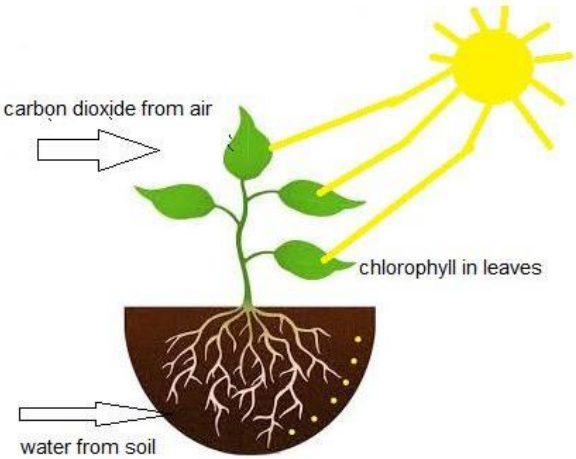
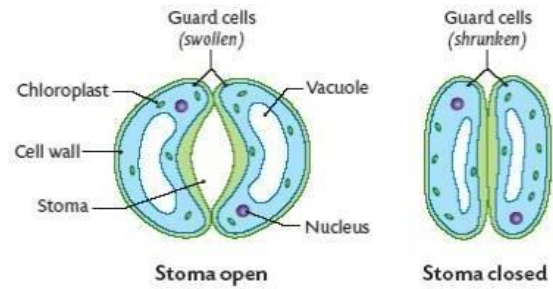
IMPORTANCE OF VITAMINS AND MINERALS AND WHAT THEIR DEFICIENCY CAUSES

VITAMIN A Healthy bones and teeth Skin and hair Causes night blindness, dryness of cornea 	VITAMIN B COMPLEX Healthy nervous system, healthy skin, memory, good digestion Causes Beri-beri, memory loss, diarrhea 	VITAMIN C Healthy bones and teeth Causes Scurvy, bleeding gums, joint pain 	VITAMIN D Healthy bones and teeth Causes Rickets, osteomalacia 	VITAMIN E Fertility, healthy muscles and skin. Causes abnormal functioning of reproductive system 
IRON Haemoglobin formation Causes anemia, weight loss, tiredness, shortness of breath	CALCIUM Healthy bones and teeth, nerve impulse transmission Causes softening of bones, loss of teeth enamel	PHOSPHORUS Strong bones and teeth, formation of cell and ATP Causes softening of bones, bow-legs	IODINE Production of thyroxin hormone Causes Goitre, scaly skin, mental retardation	
Green leafy vegetables, milk, nuts, broccoli, eggs, dates, jaggery are rich sources of minerals				

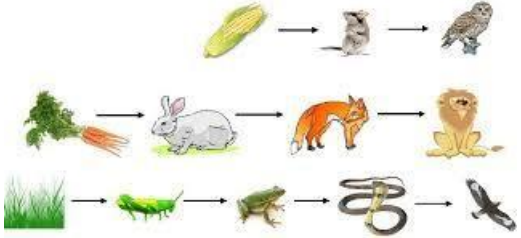
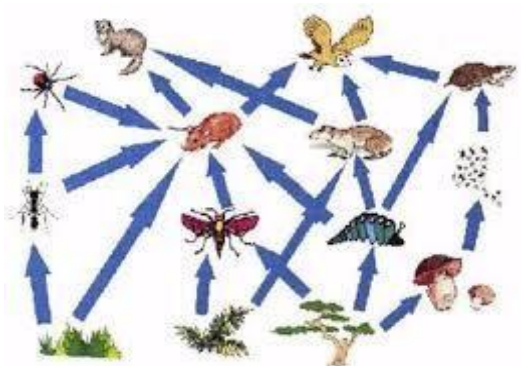
We can test foods to find what nutrients they contain

 drop iodine solution onto the food black = starch Dals will also test positive for starch but will give a lighter colour because starch content is lower in them	TEST FOR FAT Rub a small portion of the food to be tested on filter paper  filter paper translucent fat present
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NUTRITION IN PLANTS

 Food made in the leaves is taken by phloem cells to all other parts of the plant	Carbon dioxide + water → glucose + oxygen This process takes place in the presence of sunlight and chlorophyll. It is called photosynthesis. Plants need nitrogen, phosphorus, potassium, carbon and hydrogen in large quantities. These are called macronutrients. Deficiency causes yellowing of leaves, spots on leaves and poor growth. Plants need micronutrients in small quantities. E.g. Iron, manganese, Zinc. Deficiency causes shrunk, yellow leaves and stunted growth.	Tiny pores on the leaf surface called stomata allow carbon dioxide to enter. Stomata open and close by the action of guard cells. 
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FOOD CHAIN

 All animals depend on plants for their food. Animals that eat only plants are called herbivores. Carnivores are animals that eat herbivores. Omnivores eat both plant and animal food. They are all linked to each other by a food chain.	All food chains start with plants. Animals can be part of 2 or more food chains. This forms a food web. 	Plants are called autotrophic because they make their own food. Herbivores, carnivores and omnivores are called heterotrophic because they cannot make their own food. Organisms which totally depend on other animals to get their food are called parasites. Decomposers feed on the dead and decaying remains of animals and again release nutrients back into the environment for plants to use.
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