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Food and Its Importance

We'll cover the following key points:

- Energy and Food
- Kinds of Nutrients
- Balanced Diet and Junk Food
- Preservation of Food



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Learning Outcomes

By the end of this chapter, students will be able to:

- Understand the concept of food as a source of energy and its significance for the survival and growth of living organisms.
- Explain the different kinds of nutrients, including carbohydrates, proteins, fats, vitamins, and minerals, and their functions in the body.
- Describe the concept of a balanced diet, its components, and the health implications of consuming junk food.
- Identify methods of food preservation and explain how these techniques help in maintaining the quality and longevity of food.

Guidelines for Teachers

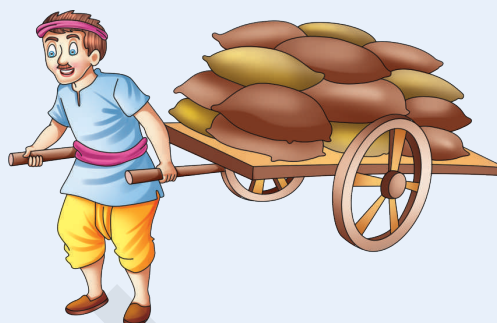
The teacher can begin the chapter by explaining the importance of food in sustaining life and its role in providing energy and essential nutrients. Use charts or visual aids to illustrate the types of nutrients and their sources. Discuss the concept of a balanced diet, emphasizing the importance of moderation and the adverse effects of junk food, using relatable examples. To make the topic engaging, simple activities like creating a balanced diet chart or demonstrating food preservation techniques (e.g., freezing, drying) can be introduced. Encourage students to compare traditional and modern methods of food preservation to understand their significance in daily life.



Warm Up

Experiential Learning

Rank the following pictures as H (high), M (medium) and L (low) based on their requirement of energy.



Fun Fact



Honey is the only food that never spoils! Ancient jars found in Egyptian tombs are still edible after 3,000 years. It's all thanks to honey's low moisture content and acidic pH, which prevent bacteria from growing. This natural sweetener was even used in ancient medicine. Talk about the ultimate long-lasting snack!

Energy and Food

Everything that is alive needs food. Food is essential for our body to maintain a healthy heart, active brain, optimally working muscles and other organs. Food provides us energy and protection against diseases.

Why we need food?

- ✦ We cannot survive without food as it gives energy for proper functioning of our body. Our body needs energy all the time even when we are sleeping. Many organs function continuously when we are either working or relaxing.
- ✦ Food helps in prevention and cure of disease.

What does the food contain?

Food contains substances that nourish our body and makes us strong and healthy. These substances are called **nutrients** different food items that we eat daily, have different types of nutrients in different quantities. These nutrients are **carbohydrates**, **proteins**, **vitamins**, **fats** and **minerals**.



Kinds of Nutrients:

Carbohydrates

Carbohydrates are one of the main types of nutrients.

Function: Carbohydrates provide energy for the body, mainly for the brain and the nervous system. We need energy for all activities we do. (walking, dancing, writing, jumping, etc.) Hence, they are called **energy-giving foods**.

Sources: Carbohydrates include sugars found naturally in foods such as fruits (apples, banana and grapes), vegetables (potato and pumpkin), milk, milk products, whole grain breads and cereals (wheat, maize and rice), starchy vegetables, legumes and refined sugar.

Fats

Function: Like carbohydrates, fats also provide energy to the body. They act as reserve of energy when carbohydrates are not available. Fats help the body to absorb certain vitamins that are fat soluble.

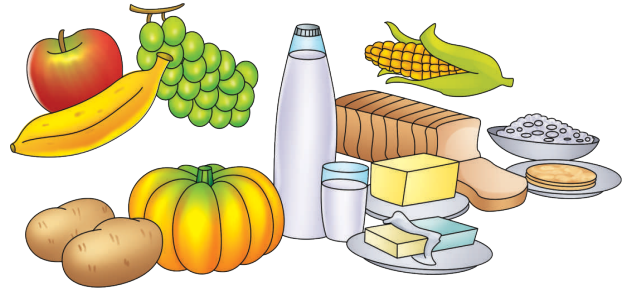
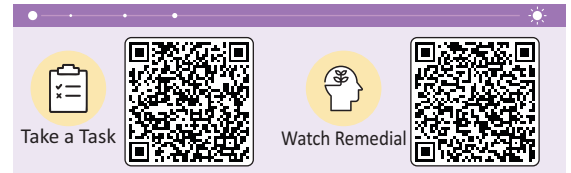
It helps to keep the body warm by maintaining proper body temperature. Eating too much fatty food makes the body obese and causes diseases.

Sources: Food rich in fats include oil, butter, nuts, coconut, ghee, cheese, cream etc. Energy needs of the body depend on age, gender, body size and composition. The people performing physical activity require more energy than others.

Proteins

Function: It is important for the maintenance and repair of the body. Hence, food items rich in proteins are called **body-building foods**. Children require more protein for their growth. Protein is needed for good hair, skin, eyes, muscles and other organs of the body.

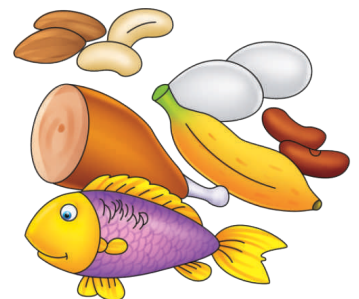
It is an important element of blood (**haemoglobin** present in blood is a protein) and helps in transportation of oxygen throughout the body.



Did you know ?

In Soviet Georgia, where people eat a lot of yoghurt lived past 100 years. They eat it at almost every meal.

Yoghurt provides almost every nutrient that the body needs. It is especially high in Calcium.



Sources: Protein rich foods include meat, fish, cheese, beans, lentils, yogurt, nuts, and seeds.

Vitamins

Function: Vitamin helps to form and maintain healthy teeth, bones and skin.

It also helps to form red blood cells and maintain the nervous system.

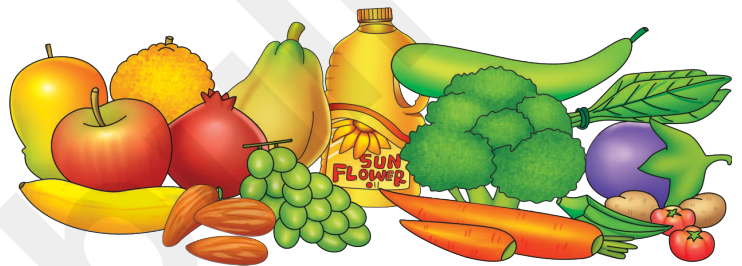
It helps to fight against infection and diseases. Hence, food items rich in vitamins and minerals are called **protective foods**.

Types: A, B, C, D, E and K are the types of vitamins found in our diet.

Sources: Food rich in vitamins are broccoli, papaya, almonds, sunflower oil, spinach, carrot, pumpkin, orange, beans, green leafy vegetables etc.

Did you know ?

Sprouted pulses are generally good for health as they contain vitamins and minerals but carry a risk of food borne illness. Unlike other fresh produce, seeds and beans need warm and humid conditions to sprout and grow. These conditions are also ideal for the growth of bacteria and might cause food poisoning.

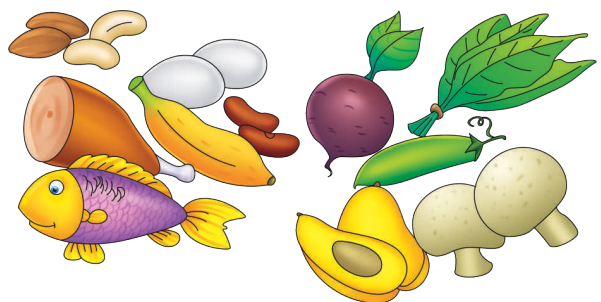


Minerals

Function: The body needs many minerals such as calcium, iron, sodium, potassium and many others. We need all minerals in desired quantity to stay healthy.

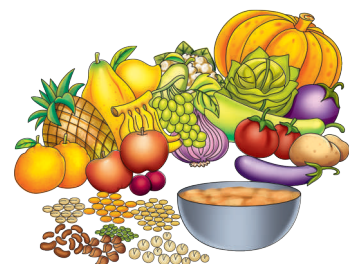
Our body needs calcium to maintain healthy bones and teeth. Iron is also a mineral which helps in the formation of blood.

Sources: The top 15 foods highest in minerals include nuts, dark leafy greens, beans, seeds, shellfish, fish, mushrooms, whole grains, low-fat dairy, red meat (lamb), whole grains, avocados, cheese, dried fruits, and tofu. We get calcium from milk and milk products etc. Iron rich food includes red meats, dried fruits and green leafy vegetables.



Water and Fibre

Dietary fibre or roughage is the indigestible portion of food derived from plants. Fibre is obtained from fruits, vegetables and the outer covering of cereals and pulses.



Water and fibre help to clean the digestive system by removing waste from the body. Water helps to regulate the body temperature.

Balanced Diet and Junk Food

Balanced Diet

No single food contains all the nutrients in the desired quantities. So we need to eat balanced diet for proper functioning of our body.

A diet that has proper proportions of carbohydrates, fats, proteins, vitamins, minerals and water necessary to keep good health is called **balanced diet**.

Those who do not eat meat or fish are called **vegetarian**. Those who eat meat or fish or both are called **non-vegetarian**. Food that we eat either comes from plants or animals. Vegetarian and non-vegetarian diets have their own advantages and disadvantages.

Milk is considered as a complete food as it contains almost all nutrients that a body needs.

Junk Food

All types of fried and fast foods lack nutrients and damages body in different ways. These are called junk food. Samosa, pizza, pasta, noodles and cold drinks come under junk food.

Why to avoid junk food?

- ✦ They may cause digestive problem.
- ✦ It lacks essential nutrients such as vitamins, proteins and minerals.

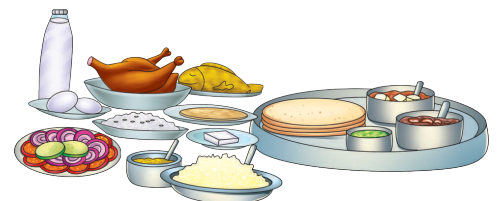
How to keep our body healthy?

- ✦ We should exercise regularly.
- ✦ We should eat healthy and balanced diet.
- ✦ We should drink at least 6-8 glass of water daily.

Avoiding Wastage of Food

“Take What You Eat and Eat All You Take.” The amount of food waste produced globally each year is more than enough to feed the nearly 1 billion hungry people in the world. We should take the following steps to avoid food wastage:

- ✦ Plan out your meal and make your shopping list to determine what you actually need for the week.



Healthy food



Junk food

- ✦ If you cook at home, make sure you cook keeping in mind there is no excess.
- ✦ Reuse the **refrigerated** left-over (if any) for the very next meal.
- ✦ Even if food gets spoilt then compost it.
- ✦ If you host a family get together either at home, a marriage hall or throw a party at a hotel, make sure you plan for the excess food to be transported to a place like an **orphanage** or an old age shelter.
- ✦ Make finishing your plate a habit.

Did you know ?

Food items exposed to dust and flies may cause diseases like diarrhoea, typhoid etc. So food should be hygienically prepared, kept covered and street food should be avoided.

Check 'N' Mate

A. Write 'T' for true and 'F' for false statements.

- Food contains substances that nourish our body. ☐
- Carbohydrates are one of the main types of nutrients. ☐
- Fibre is obtained from meat and milk. ☐
- Junk foods lack essential nutrients such as vitamins, proteins and minerals. ☐

B. Answer the following questions:

- Give two examples of energy-giving food.
- Give two examples of body-building food.
- Give two examples of protective food.

Activity

Sort the foods in the box below into the different types. Write your answers beside each of the following:

Bread Eggs Milk Carrots Fish Pasta Yoghurt Watermelon
Rice Cheese Grapes Peanuts Strawberries Potatoes

| Foods that give us energy | Foods that help us to grow big and strong | Foods that keep us far from falling sick | Foods that keep our teeth and bones strong |
|---------------------------|---|--|--|
| | | | |

Preservation of Food

Very often some foods are not available throughout the year because of changing seasons. How will you eat mangoes in winter and carrots in summer? We all wish to enjoy fresh mangoes all round the year but is it possible? No, we cannot relish fresh mangoes as such but preserved mango products like pickle, chutney, juice, squash and jam can be enjoyed right round the year.

Food preservation gives us many benefits such as:

- ✦ The food will last longer.
- ✦ The food is easy to store and distribute.
- ✦ Food wastage is reduced.
- ✦ It adds variety to the food.

Methods of Food Preservation

Drying is the oldest method of food preservation. This method removes water and prevents bacterial growth which spoils the food. For example, grapes can be dried in direct sunlight, and eventually get raisin. Chillies are preserved by drying.

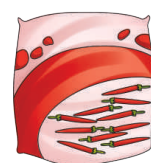
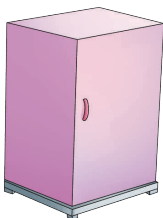
Refrigeration and freezing are the most popular forms of food preservation in use today. It slows down the bacterial growth as they become inactive because of very low temperature.

Refrigeration and freezing are used on almost all foods: meats, fruits, vegetables, **beverages** etc.

Canning is the process of applying heat to food then sealed in a jar in order to destroy any microorganisms that can cause food spoilage.

Examples: Tomatoes, Fruits, Beans, Canned Fish or Meats, Corn etc.

Pickling means preserving food in brine (salt solution) or marinating in vinegar (acetic acid). Oil is used to preserve foods. Salt kills and inhibits growth of micro-organisms. Examples: Mixing lime, mango and other vegetables with oil and salt.



Preservation of Food

In a Nutshell

- ✦ Food is very important without which we cannot survive.
- ✦ Food contains nutrients which give us energy, help to grow, fight against diseases and remain healthy.
- ✦ Carbohydrates, fats, proteins, vitamins and minerals are different nutrients of food.
- ✦ Water and roughage help to clean our system.
- ✦ A balanced diet contains all the nutrients in the right amount. We should eat a variety of food to get all the nutrients.
- ✦ Food wastage should be avoided.
- ✦ There are various methods of preservation of food.
- ✦ Pickling means preserving food in brine or marinating in vinegar.

Key Words

Improving Vocabulary

| | | |
|--------------|---|--|
| Athletes | : | Sports person. |
| Haemoglobin | : | A substance that gives blood its red colour and transports oxygen. |
| Refrigerated | : | Kept in a refrigerator at a low temperature. |
| Orphanage | : | Homes where orphans are taken care of. |
| Beverages | : | A drink other than water. |
| Hygienically | : | Clean, especially in order to prevent disease. |

Time to Apply

Applying and Creating

1. Nimisha avoids eating vegetables but likes to eat biscuits, noodles and white bread. She frequently complains of stomach ache and constipation. What are the food items that she should include in her diet to get rid of the problem? Give reason for your answer.



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EXERCISE

That turn curiosity into confidence—let's begin!



A. Objective Type Questions.

I. Fill in the blanks with the correct word.

1. Carbohydrates and fats provide _____ to our body .
2. Foods containing carbohydrates and fats are also called _____ giving foods.
3. Foods containing proteins are often called _____ foods.
4. Deficiency diseases can be prevented by taking a _____ diet.
5. _____ help in protecting our body against diseases.

B. Name the following:

1. The sources of carbohydrates: _____
2. The sources of fats: _____
3. The sources of protein: _____
4. The different types of vitamins: _____
5. The sources of vitamin C: _____
6. The minerals needed by the body: _____
7. Two preservatives: _____

C. Very Short Answer Questions.

Give one word answer.

1. The excess of this nutrient can make one obese _____
2. The important element of the blood _____
3. The indigestible portion of the food _____
4. It is needed more by a growing children than his grandfather _____
5. It grows on food kept warm, moist and open _____
6. A method used for preserving chillies and grapes _____

D. Short Answer Questions.

1. Why do we need food?
2. What are nutrients? Name the five nutrients present in food.
3. What are the different minerals that the body needs?
4. What is a balanced diet?
5. How do vitamins and minerals help our body?
6. What is the role of roughage in our body?

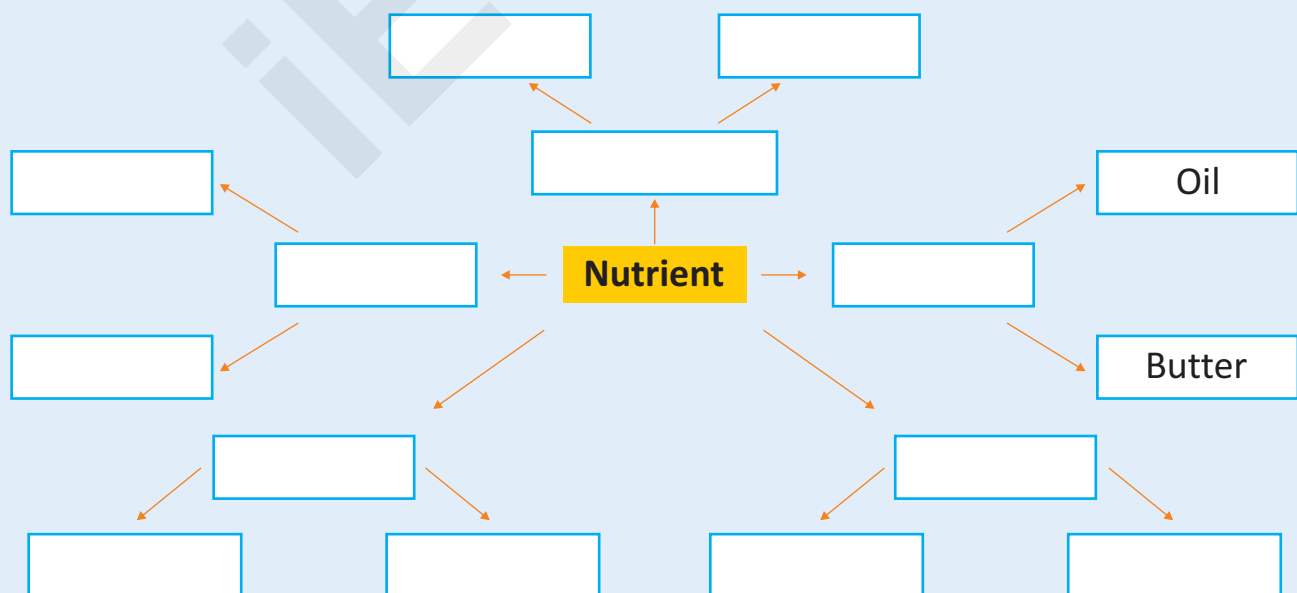
E. Long Answer Questions.

1. What are the main functions of carbohydrates and fats in our body?
2. Why should young children include more protein rich food in their diet?
3. Explain the importance of vitamins and minerals in our body.
4. What are the ways to keep our body healthy?
5. What are the steps taken to avoid food wastage?
6. What are the benefits of food preservation?



Time to Recall

Recall and complete the concept map given below.

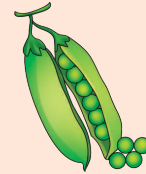
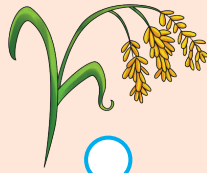




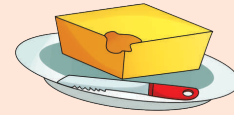
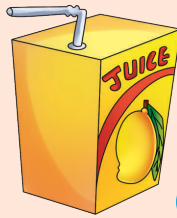
Time to Observe

Cross out the odd one in each of the following:

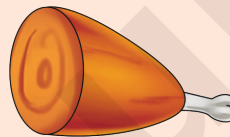
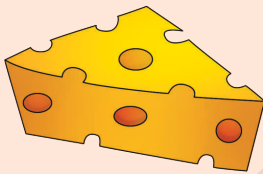
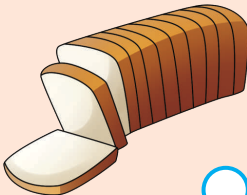
1.



2.



3.



Time to Discuss

Pondering and Communicating

Why is brown bread healthier than white bread?



Time to Create

Creating and Collaborating

Make your own food chart for a week. Compare it with the food pyramid in this lesson. Modify your eating habits if the chart does not match with the pyramid.

