

The Garden International School

Sherpur, Patna

Class – IV (Science) Study Material

*Due to pandemic of corona virus(covid19)as the lockdown has been going across the country and ocean.we have though that your studies should not be harmed.So we have been sending study materials to you, directly to your house.

Stay at home,stay Safe.

Chapter 1---The food and nutrition

A nutrient is a substance used by an organism to survive, grow, and reproduce. The requirement for dietary nutrient intake applies to animals, plants, fungi, and protists. Nutrients can be incorporated into cells for metabolic purposes or excreted by cells to create non-cellular structures, such as hair, scales, feathers, or exoskeletons. Some nutrients can be metabolically converted to smaller molecules in the process of releasing energy, such as for carbohydrates, lipids, proteins, and fermentation products (ethanol or vinegar), leading to end-products of water and carbon dioxide. All organisms require water. Essential nutrients for animals are the energy sources, some of the amino acids that are combined to create proteins, a subset of fatty acids, vitamins and certain minerals. Plants require more diverse minerals absorbed through roots, plus carbon dioxide and oxygen absorbed through leaves. Fungi live on dead or living organic matter and meet nutrient needs from their host.

Different types of organism have different essential nutrients. Ascorbic acid (vitamin C) is essential, meaning it must be consumed in sufficient amounts, to humans and some other animal species, but not to all animals and not to plants, which are able to synthesize it. Nutrients may be organic or inorganic: organic compounds include most compounds containing carbon, while all other chemicals are inorganic. Inorganic nutrients include nutrients such as iron, selenium, and zinc, while organic nutrients include, among many others, energy-providing compounds and vitamins.

Food

Food is any substance consumed to provide nutritional support for an organism. Food is usually of plant or animal origin, and contains essential nutrients, such as carbohydrates, fats, proteins, vitamins, or minerals.

Food We Eat

Food is essential for our body to develop, replace and repair itself. Food provides us energy to work and play. It protects us from diseases and help to recover fast from illness. We eat different food item and each food item contains different substances. These substances that provide nourishment essential for the maintenance of life and for growth are called nutrients. These nutrients are carbohydrates, proteins, vitamins, fats, minerals. No single food contains all the nutrients in the desired quantities so; we need to eat balance diet for proper functioning of body.

Carbohydrates

Carbohydrates provide energy for the body. We need energy for all activities we do. 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

Fats also provide energy for the body. They act as reserve of energy when carbohydrates are not available. It helps to keep body warm. Food rich in fats include oil, butter, nuts, coconut, ghee, cheese, cream etc.

Proteins

It is important for the maintenance and repair of the body. Children require more protein for their growth. Protein rich foods include meat, fish, cheese, beans, lentils, yogurt, nuts, and seeds.

Vitamins

Vitamin helps to form and maintain healthy teeth, bones and skin. It helps to fight against infection and diseases. Food rich in vitamins are broccoli, papaya, almonds, sunflower oil, spinach, carrot, pumpkin, orange, beans etc. All citrus fruits contain a lot of vitamin 'c' that help to fight against infections.

Minerals

The body needs many minerals such as calcium, iron, sodium, potassium and many others. We need all minerals in to stay healthy in desired quantity. Our body needs calcium to maintain healthy bones and teeth. Calcium we get from milk, milk products etc. Iron is also a mineral which helps in the formation of blood. Iron rich food includes red meats, dried fruits, green leafy vegetables.

Water and roughage

Water helps to regulate the body temperature. It is an important constituent of blood, skin, digestive juices etc.in our body.

Roughage is the indigestible portion of food derived from plants. It clears our stomach. It is obtained from fruits, vegetables and the outer covering of cereals and pulses.

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

Cooked Food

We cook food to improve its taste and to make it soft. It also kills germs present in raw food. Cooked foods are soft, so it is easily digested by the body.

What should we do?

Boil or cook vegetable in enough water. If vegetables are cooked in excess water, its water soluble nutrients get dissolved in water and in case we drain out that excess water, nutrients also goes away with water. So, better idea to use excess water to make curry or some soup.

Raw Food

We generally eat fruit raw. There are some that we eat raw such as carrot, radish, cucumber, tomato etc. If we cook them, their nutrition value may be lost. But we should wash them thoroughly before eating them raw.

Sprouting and Fermentation

Sprouting and Fermentation are process of preparing food that enhances its nutrition value. Sprouted moong and gram are rich in vitamins and proteins. Mixture used for idli is fermented overnight and then cooked in steam. Food cooked in steam does not lose its nutrition value. Fermented food is easy to digest.

We can make sprouts easily at home. Soak some grams in water overnight and then keep the grams in wet cloth for few hours. Sprouts will appear. We can make sprouts healthy snacks by adding chopped onion, tomato, green chilli, coriander and salt.

Food Preservation

Food item kept uncovered are exposed to dust and flies. Flies carry germs on their body and cause diseases like diarrhea, typhoid etc. when food are exposed. We should avoid eating uncovered and cut food sold in streets. Foods also get spoiled when they are left for long time as germs grow quickly when there is moisture (water) and warmth. We can see black, green or grey patches on chapatti or bread kept outside the fridge for many days. These patches are germs.

We can preserve food for long time by using following methods:

Salting: It is one of the oldest methods of preserving food. Fish and pickles preserved in this manner. Salting preserves food by drawing water out of the food, preventing bacteria growing and spoiling the food.

Boiling: Boiling controls the growth of germs in food. That is why we boil milk to prevent it from getting spoilt. Boiling prevent the food from spoilage for short period of time.

Refrigeration: Refrigeration is an easy method of preserving food for few days. It preserves taste, texture, and the nutritional value of foods. We can keep fruit, vegetables and cooked food in a refrigerator.

Dehydration: Drying food items under sun draws away water and prevents germs growth. We can use this method to preserve food items such as raw mango, cauliflower, fish, and potato chips.

Sweetening: Adding excess sugar to food items also stop germs growth. We prepare jams, jellies, murabbas by adding sugar and can preserve them for long time.

Things we should do stay healthy:

- 1. Always wash hands before and after eating.**
- 2. Always wash fruit and vegetables before using them.**
- 3. Always eat fresh cut fruit and fresh cooked food.**
- 4. Always chew food properly for easy digestion.**

*** * ***