

**Building Blocks**  
**Healthy Eating, Physical Activity, and Oral Health**  
**A Lesson Plan Module for Teachers**  
**Junior Kindergarten – Grade 6**

**Healthy Eating**  
**Grade 5**  
**Lesson 1**

**Lesson 1 – Six Kinds of Nutrients**

**Curriculum Expectations:**

Students will explain the purpose and function of calories and the major food nutrients.

**Objectives:**

Students will learn about nutrients.

**Suggested Outline**

Section 1: Introduce Today’s Lesson

Section 2: Background Information and Classroom Discussion

Section 3: Activity

Section 4: Conclusion

**Section 1: Introduce Today’s Lesson**

Today we will learn about nutrients by having a classroom discussion and completing the “Six Kinds of Nutrients” activity sheet.

**Section 2: Background Information**

**Calories and the Major Food Nutrients**

Meeting children's energy needs for growth, development and activity is a priority for healthy eating. There are approximately 50 known nutrients that the body needs to be healthy. Nutrients are things in foods that provide energy, facilitate growth, and help the body function properly. The foods eaten are made up of many different nutrients, which are divided into six classes: carbohydrate, fat, protein, vitamins, minerals, and water. Carbohydrate, fat, and protein are the nutrients that provide energy for the body. Energy from food is measured as kilocalories, also known as Calories, or as kilojoules, the metric term. Vitamins, minerals and water perform specific functions and also help the body use the energy nutrients.

**Calories**

A Calorie is a measure of how much energy the nutrients can supply the body. The body uses the food eaten as fuel, burning it to produce energy. The body needs energy to function during times of rest, heavy exercise, and the activities in between. Some nutrients have more Calories than others do. There are four Calories in each gram of carbohydrate and each gram of protein. There are nine Calories in each gram of fat. Vitamins, minerals and water do not provide Calories. Alcohol has seven Calories per gram.



## **Carbohydrates**

There are three basic types of carbohydrates - complex carbohydrates (i.e., starch), fibre, and simple carbohydrates (i.e., sugar). They are all found in plant foods. Health Canada's *Nutrition Recommendations for Canadians* suggests that the Canadian diet provide 55% of energy (total Calories) from carbohydrates. Eating patterns that are high in complex carbohydrate and fibre are associated with a lower incidence of heart disease and certain types of cancer. Some common sources of carbohydrates are grains (wheat, oats, millet and rice), legumes (peas, beans, lentils), vegetables, fruit and grain-based foods (bread, cereal, pasta). *Canada's Food Guide to Healthy Eating* encourages people to eat more fibre-rich foods such as whole grain products, vegetables, fruit, and dried peas, beans and lentils. Eating patterns high in dietary fibre are associated with a lower incidence of heart disease and some types of cancer. Most people need to eat more fibre to help their digestive system operate smoothly. In most cases, fibre does not provide energy because the body cannot digest it. Instead, it helps people stay healthy simply by passing through the body.

## **Fat**

Fat is the body's major form of energy storage and is needed for many body functions. The body obtains fat by making it and also through dietary sources. There are different types of dietary fat and it is found in both plant and animal foods. The types of fat found in plant and animal foods are different and have different effects on the body. Fat from animal foods has been shown to increase risk for some illnesses like heart disease, while fat from plant foods has been shown to do the reverse. However, the bottom line in reducing one's risk to some illnesses, is to maintain an overall lower fat diet, especially lower animal-based fat. Health Canada's *Nutrition Recommendations for Canadians* suggests that the Canadian diet include no more than 30% of energy (total Calories) from fat. However, it is important to note that this is a recommendation for adults. During the pre-school and childhood years, nutritious food choices should not be eliminated or restricted because of fat content. During early adolescence, energy needed for growth should be emphasized first, followed by a gradual lowering of fat intake. Once linear growth has stopped, the fat intake currently recommended for adults is appropriate.

## **Protein**

Aside from water, proteins are the most abundant substances in the human body. Proteins are found in every body cell and are essential for many body functions. Proteins are made up of amino acids that the body uses to develop bone, muscle, skin, and blood. Despite popular beliefs regarding proteins, such as "more protein means bigger muscles", excess protein is used as energy. If this energy is in excess of the body's needs, it will be stored as fat. About 15% of a person's diet should come from protein, and most Canadians easily meet or surpass this intake. Some common sources of dietary protein are meats, nuts, milk products (milk, cheese, yogourt), grains (wheat, oats, millet and rice), legumes (peas, beans, lentils), eggs, and tofu.

## **Vitamins**

Vitamins do not provide energy but do help the body grow and stay healthy. Fruits, vegetables and enriched grain products are good sources of many vitamins. Vitamin A is an example of a vitamin that helps keep our skin healthy and helps us to see at night. Carrots, spinach and broccoli are excellent sources of Vitamin A. Other examples of vitamins our bodies need are vitamins C, D, E, K, the B vitamins (e.g., folic acid).



## **Minerals**

Minerals help build bones and teeth and help muscles work the way they should. Calcium is an example of a mineral that helps build bones and teeth. Milk products are an excellent source of calcium. Other examples of minerals our bodies need that we get from food are potassium, sodium, iron, zinc, phosphorus, magnesium, and copper.

## **Water**

About 50-60% of our total body weight is water. A person can survive only a few days without water. Water has many functions including carrying nutrients and oxygen to cells, maintaining body temperature, and assisting in digestion and respiration.

Under normal circumstances, the body loses about 0.5 L per day through perspiration. During exercise in hot weather, a person can lose as much as 11 L in a single day. It is important to teach students about the importance of drinking enough water (about 1-1.5 L per day) and not becoming dehydrated. Listening to one's thirst trigger is not always enough. Ensure that children have easy access to water and encourage them to drink frequently.

## **Classroom Discussion**

Write the word “NUTRIENT” on the blackboard and ask students to discuss what they think it means. Ask a student to find the definition in the dictionary.

## **Section 3: Activity**

Distribute the *Six Kinds of Nutrients* activity sheet. Have students complete the handout. Discuss the six kinds of nutrients that are important for growth and health. Discuss their functions and food sources.

## **Section 4: Conclusion**

Today we learned about nutrients by having a classroom discussion and completing the “Six Kinds of Nutrients” activity sheet.