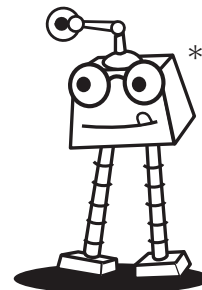


Grades 4-5 TEACHER NOTES

BODY FUEL

The body needs energy from food for the brain to think, for muscles to work, for the heart to beat and for the lungs to breathe. Three different macronutrients in food - carbohydrates, fats and proteins - provide the body with the energy it needs.



Carbohydrates

Carbohydrates (sugars and starches) are the body's preferred fuel. Starches are made up of chains of sugars. During digestion, starches are broken down into sugars such as glucose. Glucose is absorbed and travels in the bloodstream to provide the body and brain with energy. Other important nutrients in foods like B vitamins and the mineral iron also help the body use the food energy (calories) from carbohydrates.

About half of our energy (or calories) should come from carbohydrates each day. The best sources of carbohydrates include Grain Products and Vegetables and Fruit. That's one of the main reasons *Canada's Food Guide* encourages Canadians to emphasize vegetables and fruit, cereals, breads and other grain products. Milk, yogurt and cheese naturally contain lactose, a type of sugar. Meat alternatives such as dried peas, beans and lentils, nuts and seeds also provide carbohydrates.

Fats

Fats are a key source of energy for children's healthy growth, development and activity. Fats help the body absorb some of the nutrients that are essential for good health, such as vitamins A, D, E and K. Everyone needs fat, but many Canadians eat more fat than they need for good health.

During childhood there should be a gradual transition from the higher fat diet needed in infancy (50% of calories from fat) to the lower fat diet recommended for adults (20-35% of calories from fat). Children should be encouraged to enjoy lower fat choices including grain products (especially whole grain products) such as cereals, bread, pasta, rice and other grains, vegetables and fruit and dried peas, beans and lentils. However, nutrient rich foods such as peanut butter and cheese should not be restricted during childhood because of concerns about fat.

Proteins

Proteins help the body grow and develop. The body breaks down proteins into building blocks, called amino acids, that cells use to build and repair tissue like muscle, skin, hair and nails. Proteins can also be used to make glucose for energy, but the body prefers to use carbohydrates for energy and reserve proteins for maintaining body structure. Eating a higher protein diet does not help build extra muscle.

Animal products like milk, yogurt, cheese, meat, poultry, fish and eggs are sources of complete protein that provide all of the amino acids that you need for life. Soy protein is also a complete protein. Meat alternatives such as peanut butter, dried peas, beans and lentils are sources of incomplete protein that provide some of the essential amino acids. Grain products such as cereal, bread, rice and pasta also provide some incomplete protein in smaller amounts. Most people get plenty of protein by eating a variety of foods.

Grades 4-5

TEACHER NOTES (Continued)

VITAMINS AND MINERALS

Essential vitamins and minerals work together with carbohydrates, fats and proteins to help the body grow and go. A healthy variety of foods provide the nutrients that cells need to grow, repair themselves and do the jobs they are supposed to do.

Bone Builders

The minerals calcium and phosphorous help build strong bones and teeth. Vitamin D helps the body absorb the calcium and phosphorous it needs. The mineral zinc is also needed for growth and to help the body fight infections. Milk provides all of these nutrients. Meats and Alternatives also supply phosphorous and zinc. Vitamin D is known as the "sunshine" vitamin because of the body's natural ability to make this nutrient when exposed to sunlight. However, food is the most important source of Vitamin D for Canadians, especially those living at Northern latitudes and who use sunscreen during the summer.

Energy Releasers

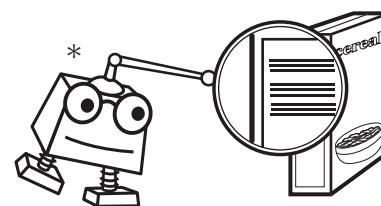
Iron carries oxygen in the blood and helps the body and brain make use of food energy. Iron deficiency or anemia can leave the body feeling tired and weak and may have a negative effect on learning ability. B-vitamins are also needed to help the body use the energy from foods. The best sources of iron and B-vitamins include lean meats, dried peas, beans and lentils, green leafy vegetables, dried fruit and cereals.

Cell Vitalizers

A number of vitamins are needed to keep cells throughout the body healthy. Vitamin C is important for healthy cells, helps cuts heal and contributes to healthy gums and teeth. Vitamin A helps cells in the eye adjust to the dark and helps keep skin cells healthy. Vitamin K helps the blood clot to stop cuts from bleeding. Dark green leafy vegetables and orange vegetables and fruit are the primary sources of these vitamins. Vitamin E, found mainly in vegetable oils, nuts, sunflower seeds, sweet potatoes and avocados also helps maintain healthy cells and fight infections.

FOOD LABELS

Nutrition labelling regulations make it mandatory for most packaged food products to provide nutrition information in the Nutrition Facts panel. Nutrition information on food labels can be used with the list of ingredients and nutrition claims to make informed food choices.



Nutrition Information

The nutrition information or Nutrition Facts panel tells you how much energy a serving of food provides and how much carbohydrate, protein and fat it contains. The % Daily Values can be used to see if a food has a lot or a little of a nutrient relative to the daily requirements of an average person.

Grades 4-5

TEACHER NOTES (Continued)

Ingredient List

Every packaged food product must have a list of all ingredients. This is especially useful for people with food allergies. Ingredients are listed in order according to their weight in the product. The ingredient there is most of is listed first, the next most is listed second and so on. Note that even the last ingredient on the list can be very important to your health. Information on allergies and anaphylaxis is available at

- ★ Calgary Allergy Network - School Related Resources www.calgaryallergy.ca/Article.html#school
- ★ Allergy and Asthma Information Association: www.aaia.ca
- ★ Anaphylaxis Canada at www.anaphylaxis.ca or ph: 1-866-785-5660

Nutrient Content Claims

The main nutritional benefits of foods are often featured on the label in the form of nutrition content claims such as: "high in fibre", "low in fat" and "source of 7 essential nutrients".

Health Claims

Health claims are statements on food labels about the relationship between general diet patterns and disease when such relationships are supported by sound science. An example of what a health claim might look like is, "A healthy diet rich in a variety of fruits and vegetables may help reduce the risk of some types of cancer."

EXPLORING BODY SYSTEMS

Healthy eating and physical activity helps all of the body's systems stay healthy. For example eating plenty of fibre, drinking plenty of fluids and being active helps keep food moving through the digestive system smoothly. Calcium, phosphorous, vitamin D and weight bearing exercises help to build and maintain strong bones.

Focus on Fibre

Fibre from plant foods helps to keep food moving through the body as digestion occurs. Since fibre intakes in North America are generally low, a good starting point for children is to aim for a minimum amount of fibre equal to their "age plus five". For example a 10 year old should try to eat at least 15 grams of fibre a day. Recent data suggest that recommended fibre intakes may be even higher than this. Foods with fibre include whole grain breads and cereals, vegetables, fruit, nuts, dried peas, beans and lentils.

Water Wse

Canada's Food Guide encourages Canadians to drink water regularly to satisfy thirst. It's important to drink more water in hot weather and when you are very active. Water helps to transport nutrients through the body and to maintain body temperature. Water quenches thirst, is inexpensive, helps prevent tooth decay and doesn't ruin children's appetite for food. Most beverages and many foods, such as fruit, are also sources of water. Nutrient dense fluids such as milk, juices and soups also make a positive contribution to fluid intakes. Although pop, fruit flavoured drinks, sports drinks and punches contribute to fluid intakes, they tend to be high in sugar and therefore should be limited.

Grades 4-5

TEACHER NOTES (Continued)

EXPLORING FOOD CHOICES

The following are key concepts from *Canada's Food Guide*.

Recommended Number of Food Guide Servings

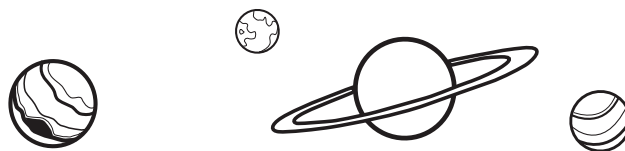
Different people need different amounts of food depending on factors such as age, gender, body size and activity level. Eating the amount and type of food recommended in *Canada's Food Guide* can help you meet your needs for essential nutrients, reduces the risk of obesity and chronic diseases and contributes to overall health and vitality. The recommended number of Food Guide Servings per day for children (males and females) aged 9 to 13 years old is:

Vegetables and Fruit (6 Food Guide Servings per day)

Grain Products (6 Food Guide Servings per day)

Milk and Alternatives (3 to 4 Food Guide Servings per day)

Meat and Alternatives (1 to 2 Food Guide Servings per day)



Food Guide Serving Sizes

Canada's Food Guide shows examples of Food Guide Serving sizes for a variety of foods in each food group.

Make Each Food Guide Serving Count

Canada's Food Guide recommends making each Food Guide Serving count, wherever you are - at home, at school, at work or when eating out. Some of the key messages include:

- ★ Vegetables and Fruit: eat at least one dark green and one orange vegetable each day; choose vegetables and fruit prepared with little or no added fat, sugar or salt; and, have vegetables and fruit more often than juice.
- ★ Grain Products: make at least half of your grain products whole grain each day; and, choose grain products that are lower in fat, sugar or salt.
- ★ Milk and Alternatives: drink skim, 1%, or 2% milk each day; have 500 mL (2 cups) of milk every day for adequate vitamin D (or fortified soy beverages if you do not drink milk); and, select lower fat milk alternatives like yogurts or cheeses.
- ★ Meat and Alternatives: have meat alternatives such as beans, lentils and tofu often, eat at least two Food Guide Servings of fish each week; and, select lean meat and alternatives prepared with little or no added fat or salt.

Less Healthy Food Choices

Canada's Food Guide encourages people to limit less healthy food and beverage choices that are high in calories, fat, sugar and salt (sodium). These include cakes, pastries, chocolate, candies, cookies, granola bars, doughnuts, muffins, ice cream, frozen desserts, french fries, potato chips, nachos, other salty snacks, fruit flavoured drinks, soft drinks, sports drinks and sweetened hot or cold drinks. These foods should be limited but can be enjoyed at times.

FOOD GUIDE FACTS

For more background information for educators visit the Health Canada web site: www.healthcanada.gc.ca/foodguide

★ *Eating Well with Canada's Food Guide - A Resource for Educators and Communicators*

★ *My Food Guide - An interactive tool that will help you personalize the information found in Canada's Food Guide.*

For additional resources on healthy eating or to find a dietitian in your area visit the Dietitians of Canada web site at www.dietitians.ca or contact your local health department.



Assessment Rubric

	Level 1	Level 2	Level 3	Level 4
Understanding of concepts	demonstrates little or no understanding of central ideas and concepts	demonstrates partial but limited understanding of central ideas and concepts	demonstrates essential understanding of central ideas and concepts	demonstrates full understanding and use of central ideas and concepts
Class discussion	minimal effort to participate	sometimes answers questions but rarely contributes relevant information	answers questions and usually contributes some relevant information	consistently answers questions and always contributes relevant information
Class activities	participates actively only with constant encouragement	sometimes participates in class activities with occasional encouragement	requires no encouragement to participate actively	enthusiastically participates in all activities and encourages others
Student activity sheet	with assistance completes activity sheet with frequent errors and does not apply new knowledge learned	completes activity sheet with partial application of concepts taught with a few errors	completes activity sheet with minor errors and applies most of the new knowledge learned	completes activity sheet independently with accuracy and thorough application of all concepts taught
Homework completion	does little of the required work at home and does not return materials to school	does some of the required work at home but materials are not returned on time	does the required work at home and usually returns materials on time	does all the required work at home and goes beyond expectations; materials are always returned promptly