



## What Is This Module About?

You may have studied the NFE A&E modules entitled *Proper Nutrition, A Basic Need* and *What Is Your Nutritional Status?* Here, we learned about proper nutrition as a basic need. The modules discussed that the key to proper nutrition is choosing the right kind of food. What is essential to good health is eating the right amount and kind of food. Knowing the elements in foods that make us healthy is the first step to proper nutrition. This will allow us to choose properly the food that our bodies need to remain healthy, and to plan a balanced meal.

A balanced meal consists of a variety of foods in different amounts. How do we prepare a balanced meal that will keep us healthy? What are the different nutrients our bodies need to grow healthy and strong? You will learn the answers to these questions in this module.

This module is divided into three lessons:

Lesson 1 — *What are Nutrients?*

Lesson 2 — *What's the Plan?*

Lesson 3 — *Be Prepared!*



## What Will You Learn From This Module?

After studying this module, you should be able to:

- ◆ explain the meaning of the term *nutrient*;
- ◆ identify the different nutrients in food needed for healthy life and growth;
- ◆ determine the proper amount of nutrients a normal person needs;
- ◆ describe what a balanced meal is;
- ◆ plan a balanced diet by choosing a variety of foods every day;
- ◆ preserve nutrients in food through proper methods of food preparation, cooking and serving; and
- ◆ practice food safety through proper methods of food sanitation.



## Let's See What You Already Know

Before studying the module, do the following activity to find out what you already know about this topic.

Fill in the blanks. Choose your answers from the words in the box.

Vitamin A	Balanced	Tissue repair	Go
Baking soda	Nutrients	Washed	
Calcium	Vitamin B	Potatoes	

1. The substances that our body needs to grow healthy and strong are \_\_\_\_\_.
2. Proteins are nutrients necessary for growth and \_\_\_\_\_.
3. A \_\_\_\_\_ meal includes the three food groups.
4. The energy-giving foods, such as bread and root crops are \_\_\_\_\_ foods.
5. An example of a mineral is \_\_\_\_\_.
6. Water-soluble vitamins are all B-vitamins and \_\_\_\_\_.
7. Carbohydrates may be obtained from \_\_\_\_\_.
8. The vitamin which is needed for strong bones, good vision and healthy skin is \_\_\_\_\_.
9. Vegetables should be \_\_\_\_\_ first before they are cut or peeled.
10. Avoid using \_\_\_\_\_ in cooking vegetables. It destroys the vitamins in the vegetables.

Well, how was it? Do you think you fared well? Compare your answers with those in the *Answer Key* on page 50.

If all your answers are correct, very good! This shows that you already know much about the topic. You may still study the module to review what you already know. Who knows? You might learn a few more new things as well.

If you got a low score, don't feel bad. This means that this module is for you. It will help you understand important concepts that you can apply in your daily life. If you study this module carefully, you will learn the answers to all the items in the test and a lot more! Are you ready?

You may now go to the next page to begin Lesson 1.

## What Are Nutrients?

Whenever we buy food, one of the first things we ask is, “Is it delicious?” We can’t deny that almost all of us prefer delicious food above all. But there is one thing that we should always remember: we need nutritious foods.

**Nutritious foods** are those that supply our bodies with nutrients we need to grow healthy and strong.

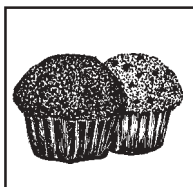
After completing this lesson, you should be able to:

- ◆ explain the meaning of the term nutrient; and
- ◆ give examples of nutrient-rich foods.

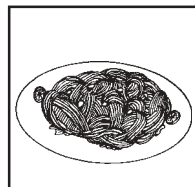


### Let’s Try This

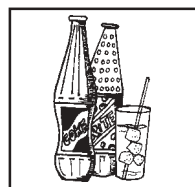
Let’s say that after studying your module, you got hungry. You went to a nearby carinderia to buy a snack and saw the following.



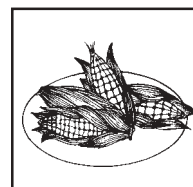
cupcakes



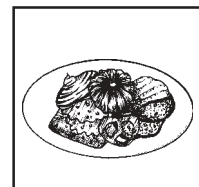
pansit bihon



soft drinks



boiled sweet corn



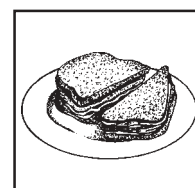
chocolate cookies



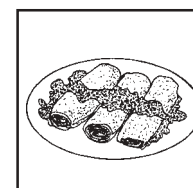
ice cream



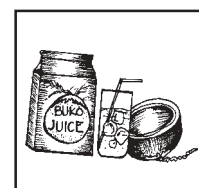
potato chips



tuna sandwich



fresh lumpia



buko juice

You have money enough for just one kind of food and drink. What food and drink will you choose for a healthy snack?

---

What are the reasons for your choice?

---

Read on to find out if your ideas are correct.



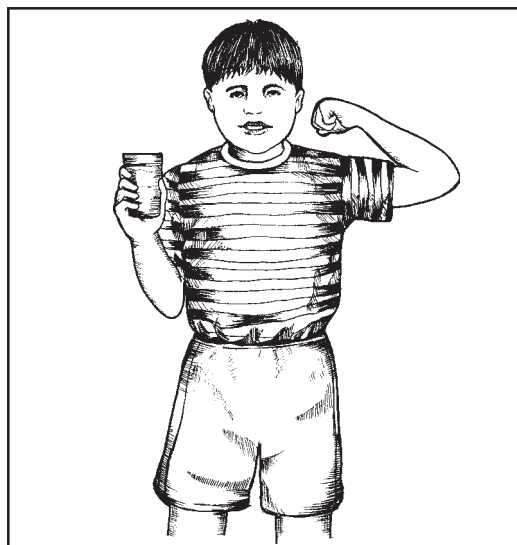
## Let's Think About this

Among the foods in the list, the following are the best choices for a healthy snack: pansit bihon, boiled sweet corn, tuna sandwich, fresh lumpia and buko juice. These foods are the healthiest or most nutritious among the foods in the list.

When we say a certain food is “nutritious,” what do we mean?

It means that the food contains several special substances or ingredients that are essential to maintain our overall health.

Think of the human body is an engine. The foods we eat give us energy that makes this “engine” function. Some food substances supply the power while some supply materials for spare parts. These substances are what we called *nutrients*. **Nutrients** are an essential part of our daily life that helps maintain our overall health.



Our body needs about 50 nutrients each in different amounts. Severe lack of some nutrients causes disease or even death. An excess of some nutrients may also disturb our body's system and may also cause death.

A “nutritious food” is a food that has several essential nutrients. Going back to our activity on page 3, pansit bihon contains noodles, pork or shrimp, and vegetables. This food is rich in many nutrients such as *carbohydrates* from noodles, *protein* from pork, and *vitamins* from vegetables. It is almost a complete meal. Meanwhile, boiled sweet corn is not only an energy-giving food, it is also rich in Vitamin A and fiber. Fresh lumpia has vegetables in it, which are full of nutrients such as Vitamins A and B.

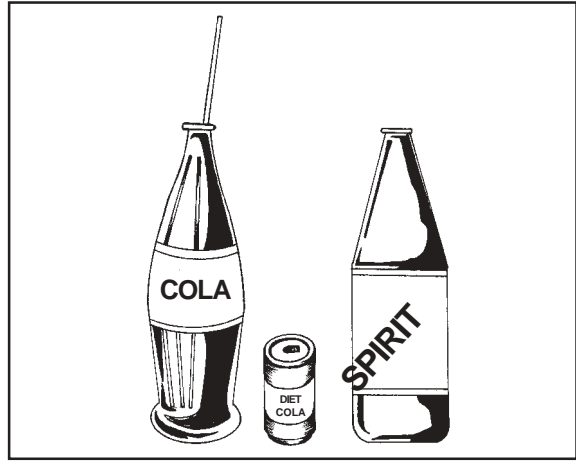
What about cupcakes, softdrinks, chocolate cookies, potato chip, and ice cream? These are rich in energy-giving nutrients (such as carbohydrates and fats), but they contain few of the nutrients our body needs.

Some foods contain more nutrients than others do. They are said to be more nutritious or “nutrient-dense.” The best example of a nutrient-dense food is milk.

A glass of milk has more nutrients than a bottle of soft drink . They may have the same amount of energy (80 calories), but milk has protein, calcium and Vitamin A.



milk



soft drinks

Some of the nutrients contained in certain foods have been mentioned earlier. Try to list them down below.

---



---



---



---

From the lesson you learned that different foods contain nutrients like carbohydrates, proteins and vitamins like Vitamin B or C.



### Let's Try This

Twelve names of important nutrients are hidden in the jumble of letters below. These words are written horizontally or vertically. Look for them by encircling the words. The first one is done to guide you. Good luck!

C	U	S	E	L	A	D	O	Y	P	R	E	F	O	N	T	E	G	U	J
I	P	I	H	O	C	A	L	C	I	U	M	A	W	E	R	N	I	P	A
K	Y	X	A	M	H	J	E	O	N	G	I	T	Z	S	U	E	M	O	C
E	V	U	R	B	Y	L	F	A	X	O	L	E	K	U	D	R	Y	T	H
W	I	G	S	O	D	I	U	M	Y	Q	U	B	A	L	O	G	N	A	M
A	T	H	E	L	U	N	T	P	I	N	K	S	A	F	L	Y	I	S	H
D	A	Y	R	O	M	I	N	E	R	A	L	U	T	U	F	O	R	S	E
E	M	B	R	A	S	S	U	L	O	D	E	F	Y	R	E	X	D	I	P
T	I	H	P	R	O	T	E	I	N	Y	X	O	F	T	A	O	L	U	P
I	N	I	B	O	R	A	U	C	C	H	O	U	K	X	E	L	M	O	
U	G	N	A	A	C	A	R	B	O	H	Y	D	R	A	T	E	Y	I	N

Did you find these words?

calcium	food	protein	carbohydrate
iron	sodium	energy	mineral
sulfur	fat	potassium	vitamin

After doing this exercise, you may compare your answers with those in the *Answer Key* on page 51.

Was it fun doing the puzzle, or did you find it difficult? If you enjoyed it, that's great! If not, that's all right. The important thing is that you know what these words mean. We are going to find out more about them. Read on!



## Let's Read

In the module *Proper Nutrition, A Basic Need*, you were introduced to the five basic nutrients. These are defined below.

**Carbohydrates** are the main sources of the body's energy.

**Proteins** are the "building blocks" of our body. They are necessary for growth and repair of tissue.

**Fats** and **oils** are concentrated sources of energy. They are necessary for good health.

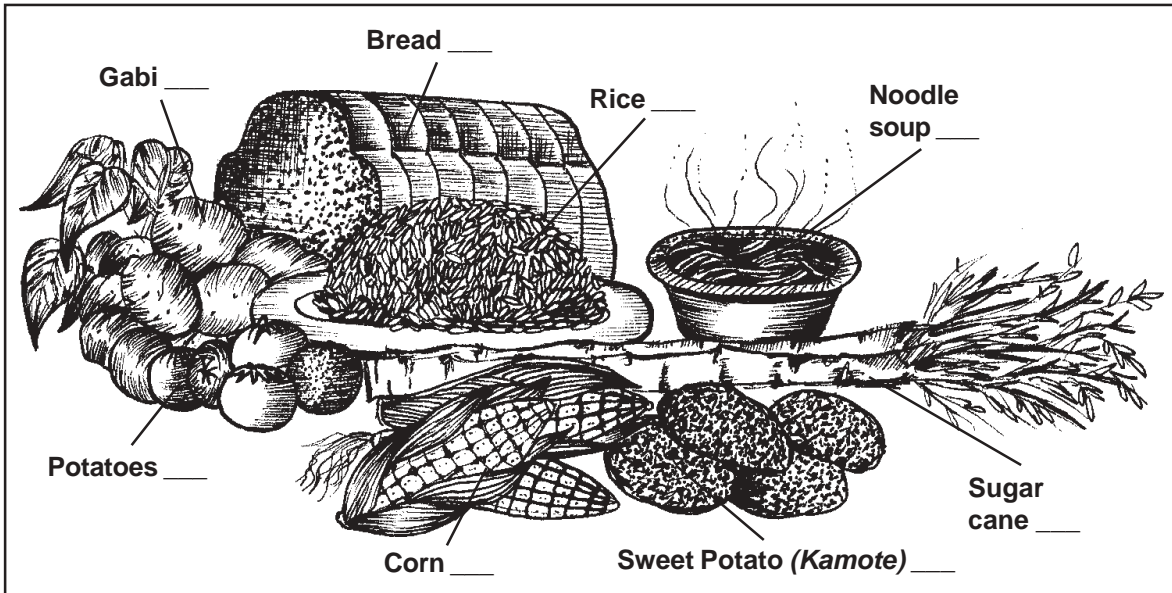
**Vitamins** are needed for growth and health. Each vitamin has specific roles to play in the body.

**Minerals** are inorganic substances that have different functions in the body.



## Let's Study and Analyze

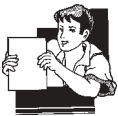
Do you know what carbohydrates are? **Carbohydrates** are the main sources of our body's energy. Which of the foods in the picture below are rich in carbohydrates? Put a check on them.



All the foods in the picture are carbohydrate-rich foods.

Were you able to answer correctly? If you checked all the pictures, excellent! This means that you are very familiar with different sources of carbohydrates.

If you left out some items, that's okay. This module is going to refresh your memory about foods that are rich in carbohydrates. If you checked only a few items, don't worry. Read on and find out more about carbohydrates.



## Let's Learn

Most of the foods we eat are rich in carbohydrates. *Carbohydrates* are the major sources of our body's energy. They form the bulk of the foods we eat. They are very important in all human activities. It is the carbohydrate from food that gives us the energy to do many things. Rice, wheat, corn, potatoes, and root crops are common and rich sources of carbohydrates. Carbohydrate-rich foods are also the main sources of proteins.

*Starch* and *sugar* are the two forms of carbohydrates. **Starch** is the most abundant and cheapest form of carbohydrate. Plants, such as grains and seeds, have starch as their primary form of carbohydrates. Aside from starch, these plants also provide **fiber**, a complex form of carbohydrate. Fiber is not digested by our body, but it aids in the removal of wastes and toxins from our body.

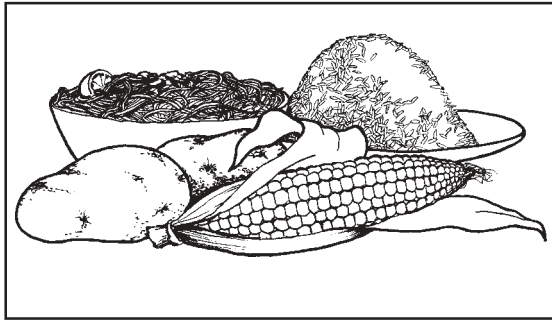


**Sugar** is the simplest form of carbohydrates. It is found in fruits, milk, honey, and sugarcane. Table sugar and corn syrup are refined forms of sugar taken from natural sources. Sugar is not an essential carbohydrate. It provides energy, but it does not contain much nutrients. In fact, excessive consumption of sugar may lead to tooth decay.

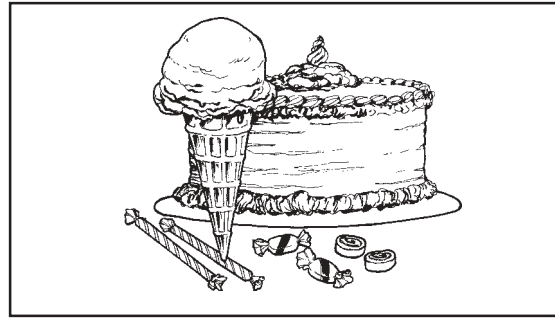


## Let's Study and Analyze

Study these two sets of foods that provide energy.



Set A



Set B

Which foods—Set A or Set B—would you eat? Why?

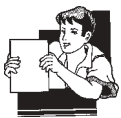
---

---

---

---

You may compare your answers with sample answer found in the *Answer Key* on page 51.



## Let's Learn

**Proteins** are the “building blocks” of our body. They are necessary for growth and tissue repair. They are parts of every cell in our body such as in our skin, hair, nails and bone. They are the necessary raw material from which our body produces substances needed for our body’s activities, like digestion and movement.

Meat and dairy products are major sources of protein. Daily consumption of these foods in a well-balanced diet ensures good protein supply.

Can you give examples of meat, dairy products and other foods that are protein-rich? Write them below.

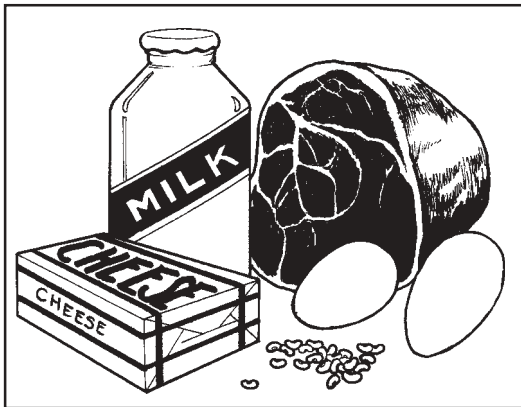
---

---

Continue reading to find out more about foods rich in proteins.



There are two kinds of protein.



**Complete proteins** are found mostly in animal products, such as meat, fish, poultry, eggs and fish. They contain all the vital substances, called *amino acids* which are needed by our body for growth and daily functioning. Other sources of complete proteins are beans, oats, and wheat, although some are very low in one or more of the essential amino acids that make up proteins.

**Partially complete or incomplete proteins** are those which lack one or more essential amino acids needed by our body to build cells. Plants with incomplete proteins are fruits, vegetables, rice, legumes some seeds and nuts.



Generally, complete proteins come from animals while incomplete proteins come from plants. To make sure we get sufficient amino acids in our diet, we may combine certain protein-rich foods that complement each other. Rice and legumes (beans) are good combination of protein-rich foods. Since rice provides incomplete protein, the legumes will supply our body with the rest of the amino acids it needs. Other healthy combinations are rice and soy, whole wheat and legumes, sesame and legumes, and legumes and seeds.

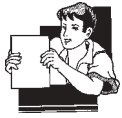


### Let's Study and Analyze.

Here are some pairs of foods that contain proteins. Can you tell which of these combinations may supply us with complete proteins? Put a check mark (✓) on the space provided before each number.

- \_\_\_\_\_ 1. nuts and fruits
- \_\_\_\_\_ 2. fish and mungo beans
- \_\_\_\_\_ 3. rice and *kangkong*
- \_\_\_\_\_ 4. apple and banana
- \_\_\_\_\_ 5. chicken and mushrooms

Compare your answers with those in the *Answer Key* on page 51.



## Let's Learn

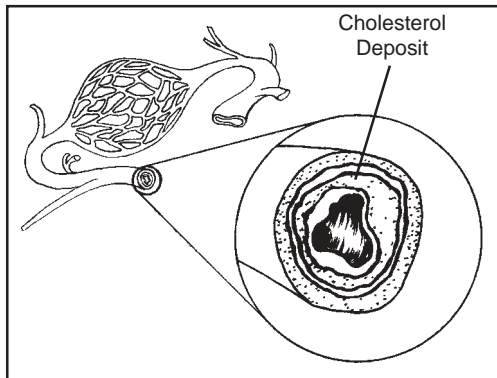
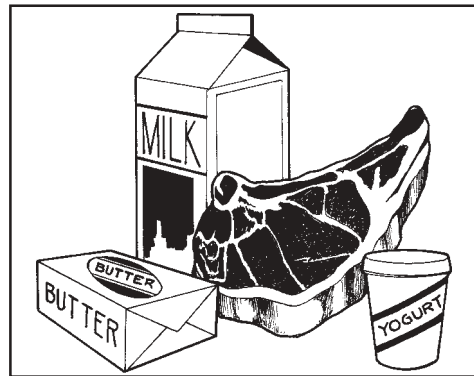
**Fats and oils** (or liquid fats) are concentrated sources of energy. They make certain vitamins available for use in our body.

Fats in our diet are necessary for good health. Aside from making available certain vitamins for the body, they also cushion vital organs and make up part of all body cells. Fats also maintain body temperature and help keep us warm in cold surroundings.

What foods are sources of fats? Almost all foods have fats. Foods that have fats in them remain longer in the stomach. This is the reason why you don't get hungry very soon after eating fatty foods.

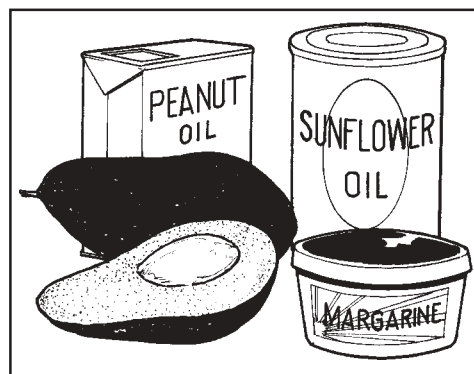
What are the different kinds of fats? Fats in food have been grouped into two: **saturated fats and unsaturated fats.**

Most saturated fats tend to be solid at room temperature. They usually come from meat and dairy products, as well as some vegetable oils, like coconut and palm oils. Butter is high in saturated fat.



Too much saturated fats tend to increase the level of cholesterol in the blood. Cholesterol is a natural waxy substance made by the body and the foods we eat. It helps to form digestive juices and make Vitamin D. However, excessive cholesterol tends to collect in our blood vessels and gradually clogs them. This may lead to a stroke or heart attack.

Unsaturated fats often stay liquid at room temperature. Unlike saturated fats, they tend to lower blood cholesterol. Mostly, they are found in plants. Examples of foods rich in unsaturated fats are soybean, corn, sunflower oil, peanut oil, margarine and avocado.





## Let's Try This

Below are pairs of foods rich in fats. Which food between each pair is more advisable to include in our diet? Put a check mark (✓) on the blank before it.

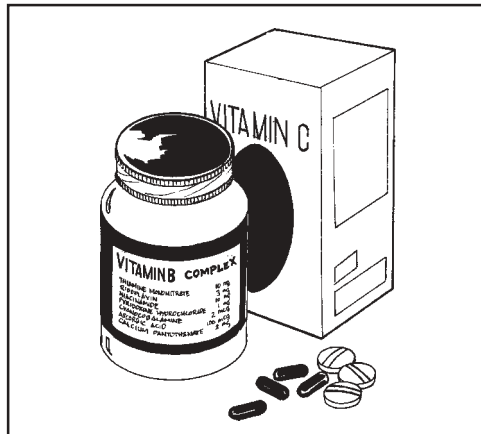
1. \_\_\_ butter
- \_\_\_ margarine
2. \_\_\_ coconut oil
- \_\_\_ sunflower oil
3. \_\_\_ palm oil
- \_\_\_ peanut oil

Compare your answers with those in the *Answer Key* on page 52.



## Let's Study and Analyze

Study the picture below.



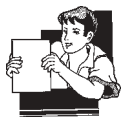
There are many kinds of vitamins promoted in various advertisements. What do you think are they for? Write your own ideas about them.

---

---

---

Vitamins are very important nutrients. But, you don't really need to buy and take vitamin pills. Vitamins can be found in many food sources. Read on to find out more about them.



## Let's Learn

Vitamins are very essential nutrients. They help maintain life and promote growth. We must get them from a variety of foods, since our body cannot manufacture them at all or cannot manufacture them in sufficient amounts. Severe lack of even one kind of vitamin causes disease, or even death. However, excessive vitamins can be very toxic to the body and are therefore highly dangerous.

There is no need for you to buy expensive vitamin formulas to get the vitamins you need. The best thing to do is to eat different kinds of vitamin-rich foods every day. This is to assure yourself of a healthy supply of all the essential vitamins needed by your body.

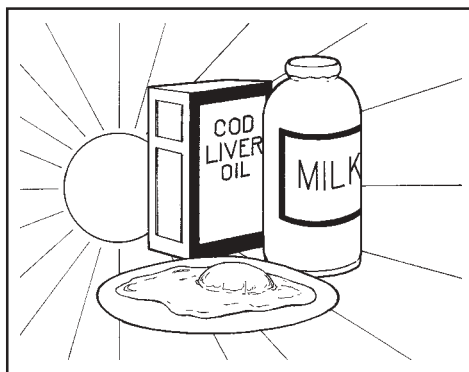
There are many kinds of vitamins. They are divided into two groups: the **fat-soluble vitamins**, and the **water-soluble vitamins**.

### *Fat-Soluble Vitamins*

There are four fat-soluble vitamins: **A, D, E** and **K**. They are digested and absorbed with the aid of fats that are in the diet. They can be stored in the body for a long time. They are stored mostly in the fatty tissue and in the liver.

**Vitamin A**, or retinol, is needed to make the bones become strong and good vision. It is also called the “beauty vitamin” because it helps to keep the skin smooth and soft. It is found in green, leafy and yellow vegetables, yellow fruits, eggs, organ meats (like liver), shellfish and marine oil.

Lack of vitamin A may result in dry and rough skin, dull eyes, and defective bone and teeth formation.

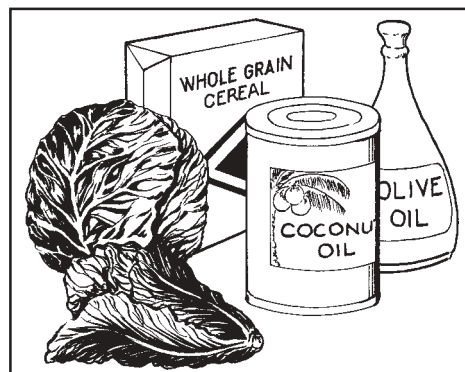


**Vitamin D** is essential for the development of strong, healthy bones and teeth. It is particularly important for the growing infants and young children. The best sources of Vitamin D are egg yolk, cod-liver oil, milk and sunlight.

Lack of vitamin D in the diet may cause serious bone problems. This condition is known as rickets.

**Vitamin E** helps protect Vitamin A and red blood cells. It is found mostly in whole grain cereals, green vegetables, olive oil, coconut oil, and other vegetable oil.

Deficiency in Vitamin E is rare since it is found in a wide variety of foods. However, there are cases in which the performance of the nerves and muscles become poor when there is an absence of this vitamin in the diet.



**Vitamin K** is essential in the clotting of the blood. **Clotting** is the clumping of blood when it is exposed to air. When you get a wound and the bleeding does not stop, it may mean that you lack Vitamin K. You may continue to bleed and this is dangerous because you may lose a lot of blood. Vitamin K helps produce substances to stop the bleeding.

Vitamin K is abundant in all green vegetables, soybeans and tomatoes.

### **Water-Soluble Vitamins**

**Vitamin B complex** is composed of several vitamins that help maintain healthy skin and a well-functioning nervous system. They change carbohydrates into energy. There are eight Vitamins B: B<sub>1</sub>, B<sub>2</sub>, B<sub>3</sub>, B<sub>6</sub>, B<sub>12</sub>, folic acid, pantothenic acid, and biotin. The first five vitamins are discussed below.

**Vitamin B<sub>1</sub>** or thiamine helps the body change the carbohydrates into energy and helps in the absorption of proteins and fats. It is found in whole grain cereals, wheat germ, brewer's yeast, fruits, eggs, vegetables, dried beans, peas and lentils.

Without Vitamin B<sub>1</sub>, our body's cells cannot use carbohydrates for energy, our nervous system will not function properly, and our muscles will perform poorly.



**Beriberi** is a primary disease related to deficiency in Vitamin B. People suffering from this disease experience loss of appetite and overall tiredness, irregularities in digestion, and a feeling of numbness and weakness in the limbs and extremities.

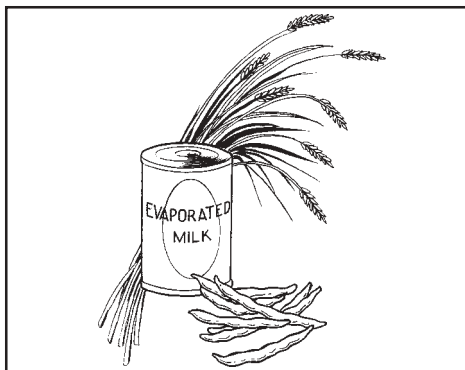
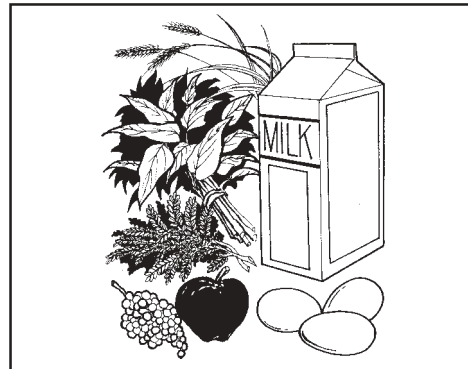


**Vitamin B<sub>2</sub>** or riboflavin is needed for the body to be able to use carbohydrates. When it is absent from the diet, sores at the sides of the mouth may occur. They may be an abnormal shiny redness of the lips, burning in the eyes, and swelling of the tongue.

Foods rich in Vitamin B<sub>2</sub> are milk, eggs, peas, beans, lentils, yeast, whole-grain products, and green leafy vegetables.

**Vitamin B<sub>3</sub>** or niacin is needed by the skin and helps in the metabolism of carbohydrates. Such foods as milk, eggs, fruits, fresh green vegetables, and whole grains are sources of this vitamin.

The absence of Vitamin B<sub>3</sub> from the diet results in a condition called **pellagra**. The skin becomes rough and the person suffers from a gradual loss of strength. There may also be skin wounds and disturbances in digestion.

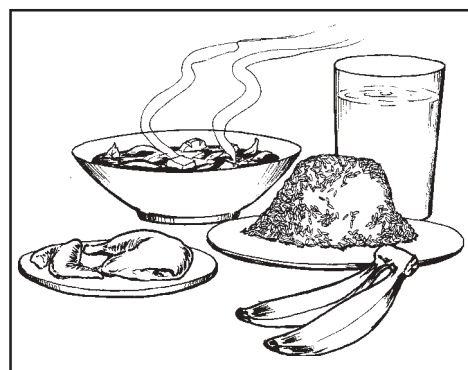


**Vitamin B<sub>6</sub>** or pyridoxine is a substance used in the metabolism of proteins, carbohydrates and fats. It is found in whole grains, legumes, most fresh foods, and in pasteurized and evaporated milk.

Absence of Vitamin B<sub>6</sub> from the diet may cause convulsions in young babies. Adults may experience irritability and nervousness.

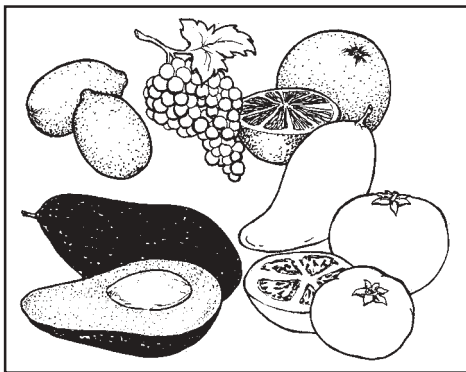
**Vitamin B<sub>12</sub>** or cyanocobalamin is very important in the production of blood cells. When it is absent from the diet, the person may suffer from certain forms of anemia. He may feel pain, tingling, and numbness in his hands and feet. He may also experience the inability to move certain body parts.

Ample Vitamin B<sub>12</sub> may be provided by a well-balanced diet. There are also Vitamin B<sub>12</sub> injections to raise the level of blood.



**Vitamin C** or ascorbic acid is easily destroyed especially when exposed to too much heat. It is important in healing wounds and the formation of collagen, a protein important in the formation of healthy skin and bones.





The best sources of Vitamin C are oranges, tomatoes, avocados, and other fresh fruits in season. Most vegetables also contain vitamin C but some of this is lost in cooking.

Without Vitamin C, a serious disease called **scurvy** may develop. An infant may experience swelling of the hands and feet, pain upon flexing or pulling them, and some bone damages. However, excessive intake of ascorbic acid can cause kidney stones, disturbances in digestion, and destruction of red blood cells.

Since Vitamin B complex and Vitamin C are water-soluble, they are not stored in the body for long. So, it is advisable that good sources of these vitamins be eaten every day.



## Let's Remember

The following chart is a summary of all the vitamins, their importance, and common sources.

Vitamin	Importance	Common Sources
Vitamin A (retinol)	It is needed for good vision, strong bones, and healthy skin.	green, leafy and yellow vegetables, yellow fruits, eggs, organ meats, shellfish and marine oil
Vitamin B <sub>1</sub> (thiamine)	It helps the body change the carbohydrates into energy and helps in the absorption of proteins and fats.	wholegrain cereals, wheat germ, brewer's yeast, fruits, eggs, vegetables, dried beans, peas and lentils
Vitamin B <sub>2</sub> (riboflavin)	It is needed by the body to be able to use carbohydrates.	milk, eggs, peas, beans, lentils, yeast, whole grain products and green leafy vegetables
Vitamin B <sub>3</sub> (niacin)	It is needed by the skin and helps in the metabolism of carbohydrates.	milk, eggs, fruits, fresh green vegetables and whole grains
Vitamin B <sub>6</sub> (pyridoxine)	It is a substance used in the metabolism of proteins, carbohydrates and fats.	whole grains, legumes, most fresh foods, pasteurized milk and evaporated milk
Vitamin B <sub>12</sub> (cyanocobalamin)	It is important in the food production of blood cells.	a well-balanced diet or proper amounts of foods rich in carbohydrates, proteins, fats, vitamins and minerals



Vitamin	Importance	Common Sources
Vitamin C (ascorbic acid)	It is important in healing wounds and the formation of collagen, a protein important in the formation of healthy skin and bones	oranges, tomatoes, avocados, other fresh fruits in season and most vegetables
Vitamin D	It is essential for the development of strong, healthy bones and teeth.	egg yolk, cod-liver oil milk
Vitamin E	It helps to protect Vitamin A and red blood cells	whole grain cereals, green vegetables, olive oil, coconut oil and other vegetable oil
Vitamin K	It is essential in the clotting of the blood.	all green vegetables, soybeans, and tomatoes



### Let's Try This

Examine the foods that you usually include in your diet. Write them in the column opposite the vitamin that they contain.

Vitamin	Food Sources
Vitamin A (retinol)	
Vitamin B <sub>2</sub> (riboflavin)	
Vitamin B <sub>3</sub> (niacin)	
Vitamin B <sub>6</sub> (pyridoxine)	
Vitamin B <sub>12</sub> (cyanocobalamin)	
Vitamin C (ascorbic acid)	
Vitamin D	
Vitamin E	
Vitamin K	

Compare your answers with those in the *Answer Key* on page 52.



## Let's Try This

We have talked about carbohydrates, proteins, fats and oil and vitamins. In addition to these nutrients, another essential nutrient for keeping the human body healthy is **mineral**.

What are minerals? Why are they important in our diet? Which foods are rich sources of mineral? Write your own ideas below.

---

---

---

Read on to see if your ideas are correct.



## Let's Read

**Minerals** aid in the various processes that produce energy for the body's use. Most foods contain the minerals needed by the body, so it is easy to obtain them. They do not supply us with energy, but they aid in the various processes that produce energy.

There are many kinds of minerals. The essential minerals are called **macro-** and **micro-minerals**. **Macro-minerals** are those which are needed in large doses, while the **micro-minerals** are needed only in small amounts. Both minerals are essential because they are needed to prevent or cure certain diseases and aid in the various processes in the body.

Study this summary on 5 important macro-minerals.

Mineral	Major Functions	Common Sources
Calcium	<ul style="list-style-type: none"> <li>◆ It aids in skeletal development and maintenance of healthy bones and teeth.</li> <li>◆ It helps in normal action of the muscles and regulation of heartbeat.</li> </ul>	milk and other dairy products, tofu, canned fish with bones, peanuts, soybeans
Phosphorous	<ul style="list-style-type: none"> <li>◆ It aids in the absorption of dietary components.</li> <li>◆ It is involved in structural development and production of energy.</li> </ul>	meat, poultry, yeast, soybean, flour, milk, cheese, nuts, cereals
Sodium	<ul style="list-style-type: none"> <li>◆ It helps in the production of energy.</li> </ul>	bacon, salami, sauces, canned or boiled ham, cheese, margarine, butter, meat, fish

Mineral	Major Functions	Common Sources
	<ul style="list-style-type: none"> <li>◆ It is involved in the transport of amino acids into the body.</li> </ul>	
Chloride	<ul style="list-style-type: none"> <li>◆ It helps in the production of the digestive juice (hydrochloric acid).</li> </ul>	sodium-rich foods, like meat and dairy products
Potassium	<ul style="list-style-type: none"> <li>◆ It aids in the formation of proteins and in energy production.</li> <li>◆ It stimulates the normal movement of the intestinal tract.</li> </ul>	fresh fruits and vegetables, soybean flour, shellfish, beans, nuts, cereals, milk meat



## Let's Study and Analyze

Read the following situations. Then answer the questions that follow.

1. Your neighbor complain of irregular heart beats. What mineral would she need to help her heart beat normally?

---



---

2. A friend of yours finds it hard to eliminate his body wastes. What mineral do you think he lacks in his diet? Why do you think so?

---



---

3. You learned about someone who finds it hard to absorb the nutrients in the foods she eats. What mineral does she need the most? Why?

---



---

You may compare your answers with those in the *Answer Key* on page 52.



## Let's See What You Have Learned

Write the letter of the correct answer in the blank before each number.

- \_\_\_ 1. They are substances found in food that are essential in maintaining a healthy body.
- medicines
  - nutrients
  - diet
  - additives
- \_\_\_ 2. It contains nutrient-rich foods in the proper amounts.
- a balanced meal
  - junk foods
  - an instant meal
  - preservatives
- \_\_\_ 3. Which of the following combinations of foods is nutritious?
- hamburger and fries
  - lollipops and candies
  - ice cream and cake
  - lumpiang shanghai* and rice
- \_\_\_ 4. Which of the following nutrients is the primary source of energy?
- vitamins
  - minerals
  - carbohydrates
  - proteins
- \_\_\_ 5. Which is the primary function of proteins?
- They repair tissues.
  - They maintain our body temperature.
  - They supply us with energy.
  - They aid in blood clotting.
- \_\_\_ 6. Too much saturated fats in the diet may result in \_\_\_\_\_.
- scurvy
  - excessive bleeding
  - poor eyesight
  - heart attack
- \_\_\_ 7. Which combination of foods provides complete proteins?
- fish and rice

- b. mango and orange
  - c. Baguio beans and rice
  - d. malunggay and peanuts
- \_\_\_ 8. What is needed by the body for strong bones and teeth?
- a. potassium
  - b. calcium
  - c. sodium
  - d. phosphorus
- \_\_\_ 9. The absence of vitamin B<sub>1</sub> may result in \_\_\_\_\_.
- a. scurvy
  - b. pellagra
  - c. beri-beri
  - d. anemia
- \_\_\_ 10. Which mineral helps in the elimination of wastes?
- a. potassium
  - b. sodium
  - c. calcium
  - d. chloride

Compare your answers with those in the *Answer Key* on pages 53–54.

If you got all the answers correct, very good! This shows that you have learned a lot from this lesson. If you got a low score, you may have to review the lesson to understand it more clearly.



### Let's Remember

**Nutrients** are important part of our daily life. They help maintain our overall health and are involved in the various process that keep the body functioning.

There are several kinds of nutrients. In this lesson we have discussed five essential nutrients: carbohydrates, proteins, fats and oils, vitamins and minerals. The chart below shows a summary of important information on these nutrients.

<b>Mineral</b>	<b>Major Functions</b>	<b>Common Sources</b>
Proteins	<ul style="list-style-type: none"> <li>◆ They are necessary for growth and repair of tissues.</li> <li>◆ It helps in the development of bones, teeth, and hair.</li> </ul>	meat, fish, poultry, milk, eggs, beans, peas, nuts, bread, cereal
Carbohydrates	<ul style="list-style-type: none"> <li>◆ They provide energy for the body to function in daily life.</li> </ul>	rice, wheat, corn, potatoes, camote
Fats and oils	<ul style="list-style-type: none"> <li>◆ They act as a source of energy.</li> <li>◆ They make certain vitamins available for use in the body.</li> </ul>	meat and dairy products, vegetables oils, avocado
Vitamins	<ul style="list-style-type: none"> <li>◆ They combine with the other nutrients to provide us with energy and build body tissues. (Each vitamin has a specific role to play.)</li> </ul>	meat and dairy products, fruits and vegetables
Minerals	<ul style="list-style-type: none"> <li>◆ They aid in the vital processes in the body.</li> <li>◆ They are involved in structural development and energy production.</li> </ul>	meat, poultry, fish, dairy products, vegetables, fruits

It is important for us to include nutrient-rich foods in our diet. Also, we have to make sure that we take them in the proper amounts, since a deficiency or excess in any of the nutrients may cause certain diseases.

## What's The Plan?

You have learned of the importance of certain nutrients to the body. These nutrients are found in the foods that we eat every day. However, it does not mean that we can eat anything in any amount. We have to plan meals that have proper amounts of foods.

Planning our daily meals is a very important task. Careful planning ensures that our meals are well-balanced which is important to maintain our health.

After studying this lesson, you should be able to:

- ◆ explain what a balanced meal is;
- ◆ identify the three basic food groups; and
- ◆ prepare a meal plan.



### Let's Try This

Do you still remember what you had for lunch yesterday? Write them in the table below. Then, answers the questions that follow.

What I ate for Lunch yesterday?

From our previous lesson, you have learned the different nutrients and their food sources. Look at the foods you wrote in your table (the ones who had for lunch yesterday.)

1. Which foods gave you proteins?

---



---

2. Which foods gave you carbohydrates and fats?

---



---



3. Which foods gave you vitamins and minerals?

---

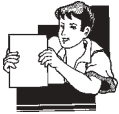
---

4. Was your lunch a balanced meal? Why or why not?

---

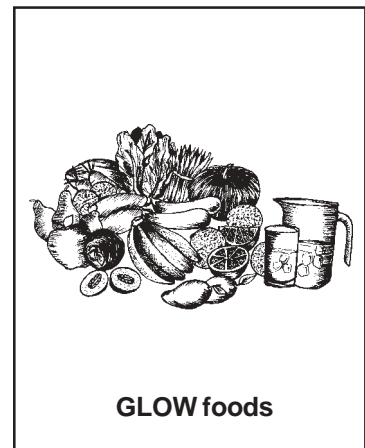
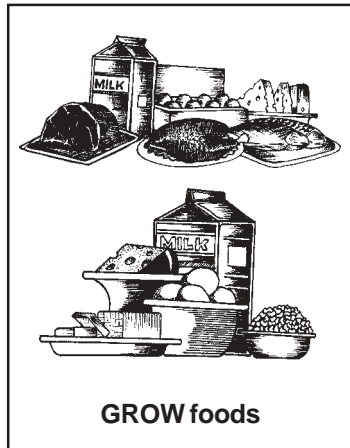
---

If you were able to provide food items for questions 1 to 3, that's great! You were able to eat a lunch that provided all the nutrients you need. You may want to look at the sample answers on page 54.



## Let's Learn

Food and nutrition experts have made a simple guide that will help us choose our foods wisely. They grouped foods according to the nutrients they provide. We call them the three **basic food groups**. These three are the “Go,” “Grow” and “Glow” foods.



**Go foods** are energy-giving foods. They are mostly rich in carbohydrates and fats. **Grow foods** are body-building foods. They are rich in proteins. Lastly, **Glow foods** are body-regulating foods. They are rich in vitamins and minerals.

Combining moderate amounts of these foods will give you a balanced meal. A **balanced-diet** consists of the right amount of foods from the three food groups which provide needed nutrients.



## Let's Think About This

Here is a sample of a menu plan.

Breakfast	Lunch	Dinner
<ul style="list-style-type: none"> <li>◆ <i>champorado</i> with milk</li> <li>◆ <i>tuyo</i></li> <li>◆ banana</li> </ul>	<ul style="list-style-type: none"> <li>◆ <i>sinigang na baka</i> with string beans, <i>kangkong</i> and <i>gabi</i></li> <li>◆ rice</li> <li>◆ mango</li> </ul>	<ul style="list-style-type: none"> <li>◆ fried <i>tilapia</i></li> <li>◆ salted egg with tomatoes</li> <li>◆ leftover soup from <i>sinigang</i></li> <li>◆ rice</li> </ul>

You will notice that all the meals include Go, Grow, and Glow foods. These make all the meals balanced. Study the breakfast menu. *Champorado* with milk is a Go food. *Tuyo* is a Grow food and the banana is a Glow food.

Take a look at the meals for lunch and dinner. Can you distinguish the different food groups? Fill in the table below. The items for breakfast have been done for you.

Meals	Food Groups		
	Go	Grow	Glow
Breakfast	<i>champorado</i> with milk	<i>tuyo</i>	banana
Lunch			
Dinner			

If you wrote rice under Go, you are right! *Sinigang na bangus*, fried *tilapia*, and salted egg belong under Grow. Banana, string beans, *kangkong*, *gabi*, and tomatoes are Glow foods.

If you got everything right, that's great! If not, don't worry. You just need a little practice.



## Let's Study and Analyze

Look at the pictures below. You can see a little boy, a teenager, and a man.



Do you think that they should eat the same kinds of food? \_\_\_ Yes \_\_\_ No

Should they eat the same amounts of food? \_\_\_ Yes \_\_\_ No

If your answers to the first question is “yes,” you are right! If your answer to the second question is “no,” you are correct!



## Let's Talk About This

We all need the same nutrients to keep us healthy and strong. But, why do you think we need different amounts of these nutrients? Look at the pictures below and answer the questions that follow.



Man in a store entertaining a customer



A farmer turning the soil

The two men in the pictures are almost of the same age. But look at what they are doing.

Are they spending the same amount of energy for work? \_\_\_\_\_

Who is exerting more energy? Why?

---

---

Look at the little girl and the teenager below.



Little girl



Teen-age girl

Does the teenager need more nutrients than the little girl does? \_\_\_\_\_

Why do you think so?

---

---

Now, compare these two pictures.



Sick boy



Healthy boy

Are the two boys healthy? \_\_\_\_\_

Which of them needs more nutrients?

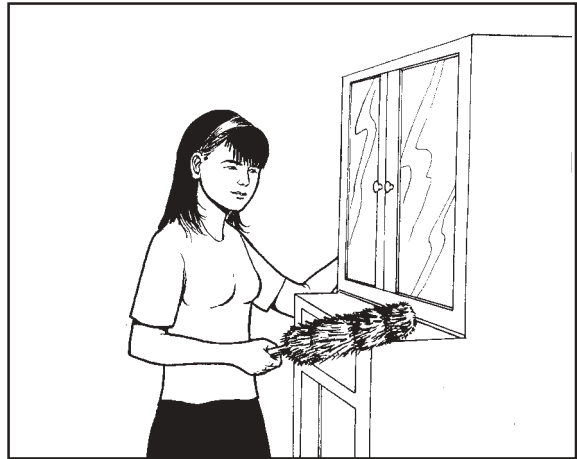
---

---

Look at the pictures of a boy and a girl who are almost of the same age.



Boy playing basketball



Girl dusting a cabinet

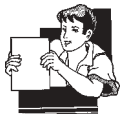
Do the boy and the girl need the same amount of nutrients? \_\_\_\_\_

Which of them needs more nutrients? Why?

\_\_\_\_\_

\_\_\_\_\_

Read on to find out if your answers are correct.

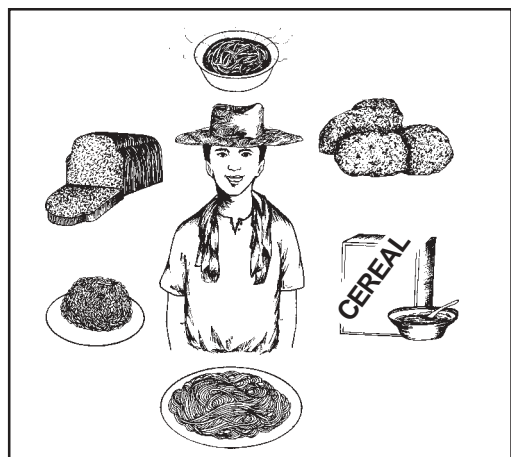


## Let's Learn

We all spend different amounts of energy, and we differ in body structure and state of health. Because of this, we need different amounts of nutrients to meet our specific needs. Each of us should know how much of each food group we need to include in our diet every day.

The first pair of pictures shows two men of almost the same age and body built. But, we can see that they do not spend the same amount of energy. Whom do you think spends more energy? If you think that the farmer does, you're right!

Since the farmer requires lot of energy for his work, then he needs to eat lots of energy-giving foods. They will provide him the nutrients he needs. You have learned that energy-giving foods are called Go foods.



Can you remember some examples of Go foods? Write them down.

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The second pair of pictures shows two girls of different ages. The little girl needs more Grow foods, such as those rich in protein. She is in her crucial stages of growth, so she needs more body-building foods to help her body grow and develop properly.

List as many Grow foods as you can.

2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

People with different states of health also need different amounts of nutrients. Do you remember when you or any of your siblings were sick?

Sick people are usually advised to take lots of vitamins and minerals. This will help them fight their sickness.



Under which food group do vitamins and minerals belong? Write it down and give examples of foods rich in these nutrients.

3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The last pair of pictures shows a girl and a boy. Girls and boys have different body structures and usually have different activities. So, they generally need different amounts of nutrients.



## Let's Try This

Read the statements below. Encircle the letter of the correct answer.

1. Ramon is a very active boy. In the morning, he jogs around the neighborhood. He also likes playing basketball with his friends every afternoon after school. He also makes sure he does his homework in the evenings. What food group does Ramon need the most?
- a. Go foods                      b. Grow foods                      c. Glow foods

2. Jennifer has cough and cold. She has been feeling weak ever since she had them. Her mother has been giving her lots of calamansi juice, which is rich in Vitamin C. What food group does Vitamin C belong to?
  - a. Go foods
  - b. Grow foods
  - c. Glow foods
  
3. My sister just gave birth to a baby boy. He is very small and needs to drink much milk. Milk will provide him with many nutrients that will make him grow healthy and strong. What food group does my sister's baby need the most?
  - a. Go foods
  - b. Grow foods
  - c. Glow foods

Compare your answers with those in the *Answer Key* on page 54.



## Let's Think About This

You have just learned that there are different amounts of nutrients that each of us needs. But even if we need different nutrient levels, we still should maintain a balanced diet. Can you recall what a balanced diet means?

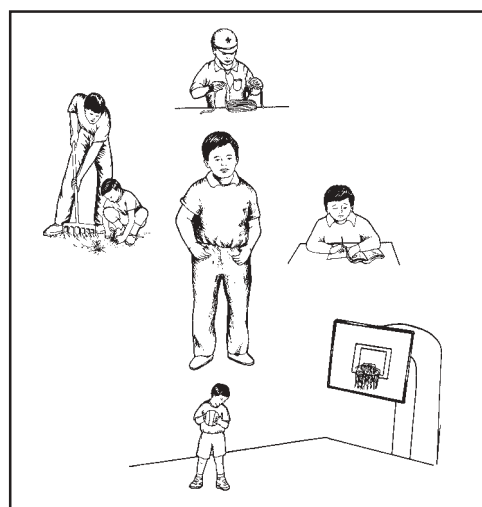
A balanced diet is \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

When we say that a meal is balanced, it contains the right amount of foods from the three food groups.

Now, let us try to put together the concept of a balanced-diet and that of different nutrient levels. Read the situation below.

Mike is 12 years old, still a growing boy. He actively participates in his school activities and helps his father in their small farm. In school, he attends the boy scout training and plays basketball with his friends. He doesn't forget to do his assignments every day.

Mike is a growing child and a very active one, too. He needs much energy for his school activities and for helping take care of the family's farm.



Can you help Mike's mother plan for his breakfast, lunch, and dinner? Remember that Mike should be able to eat balanced meals. But also keep in mind that he needs a lot of certain nutrients because of his many energy-demanding activities. What food group does he need the most? \_\_\_\_\_



If you answered that Mike needs more Go foods, you are right! Mike needs more of the foods that will give him all the energy he needs in his daily activities.

Now, let us help Mike’s mother plan his meals. Try to prepare a balanced meal plan for Mike by choosing from the foods in the table below. Make sure you choose the right combinations. Then, write your choices in the proper column in the table that follows.

Breakfast	Lunch	Dinner
1 cup rice	1 bowl <i>sinigang na baka</i>	1 bowl <i>nilagang baka</i>
1 piece banana	1 small plate <i>pinakbet</i>	1 small plate <i>menudo</i>
1 small plate <i>adobong kangkong</i>	1 medium-sized tilapia	1 small plate <i>adobong manok</i>
2 pieces <i>longganisa</i>	2 cups rice	1 medium-sized banana
2 slices <i>tapa</i>	1 cup rice	2 cups rice
1 bottle soft drink	1 medium-sized banana	1 cup rice
1 glass water	1 slice papaya	1 glass water
	1 glass calamansi juice	1 glass soft drink
	1 bottle soft drink	
	1 glass water	

Write your answers here:

Breakfast	Lunch	Dinner

Explain your choices.

---



---



---



---

You may compare your answers with those in the *Answer Key* on page 55.



## Let's Try This

How about you? How would you plan for yourself a-three balanced meals for one day? Fill in the table below.

Breakfast	Lunch	Dinner

Show your answers to your Instructional Manager.



## Let's See What You Have Learned

Write the letter of the correct answer in the blank before each number.

- \_\_\_ 1. It is the basic food group that is mostly rich in carbohydrates.
- a. Grow foods
  - b. Glow foods
  - c. Junk foods
  - d. Go foods
- \_\_\_ 2. It consist of the right amount of foods from the three basic food groups.
- a. a balanced meal
  - b. junk foods
  - c. a vegetarian meal
  - d. an instant meal
- \_\_\_ 3. Which of these are examples of Glow foods?
- a. rice and cereals
  - b. chicken and fish
  - c. fruits and vegetables
  - d. bread and butter

- \_\_\_ 4. Body-building foods are called \_\_\_\_\_.
- Go foods
  - Grow foods
  - Glow foods
  - Junk foods
- \_\_\_ 5. Pasta and pancit are examples of \_\_\_\_\_.
- Junk foods
  - Grow foods
  - Glow foods
  - Go foods
- \_\_\_ 6. What are Glow foods?
- They are body-regulating foods.
  - They are energy-giving foods.
  - They are muscle-building foods.
  - They are body-building foods.
- \_\_\_ 7. Which is not a balanced breakfast?
- champorado, tuyo*, and banana
  - fruit salad and pineapple juice
  - chicken, steamed vegetables, and apple
  - bread, salted eggs with tomatoes, and orange
- \_\_\_ 8. Jack is an active boy. He loves swimming and running. Which food group does he need most?
- Go foods
  - Junk foods
  - Glow foods
  - Grow foods
- \_\_\_ 9. Grace is a growing girl. She needs foods rich in \_\_\_\_\_.
- fats and oils
  - carbohydrates
  - proteins
  - vitamins and minerals
- \_\_\_ 10. Which food group do you need the most when you are sick?
- Grow foods
  - Glow foods
  - Go foods
  - Junk foods

Compare your answers with those in the *Answer Key* on pages 55–56.

If you got all the answers correct, very good! This shows that you have learned a lot from this lesson. If you got a low score, you may have to review the lesson to understand it more clearly.



## Let's Remember

In this lesson, you learned the following:

- ◆ Planning our daily meals is important to ensure that we get all the needed nutrients in the right amount.
- ◆ The three basic food groups which are basic ingredients in planning balanced meals are:
  - **Go** or energy-giving foods
  - **Grow** or body-building foods
  - **Glow** or body-regulating foods
- ◆ A balanced meal or diet consists of the right amount of foods from the three food groups, which provide us with needed nutrients.
- ◆ Each of us has different nutrient requirements depending on sex, age, state of health, and the activities we perform every day.

## Be Prepared!

At this point, you may already know how to plan nutritious and balanced meals for you and your family. But that is not enough. You also have to know how to prepare and cook the foods you plan to include in your meal. You have to make sure that the nutritious foods you have bought from the local market will not lose their nutrients when you prepare, cook and serve them.

After studying the lesson, you should be able to:

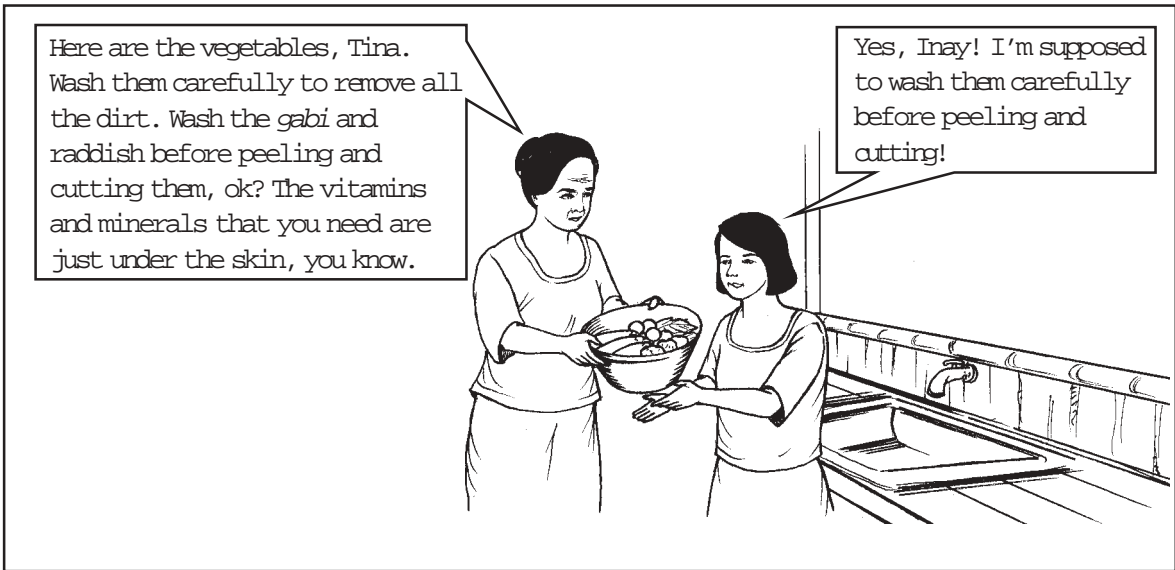
- ◆ describe food preparation methods that will preserve nutrients in foods; and
- ◆ explain proper food sanitation methods.



### Let's Read

Read the comic strip below.





After a little while...





## Let's Talk About This

Did you enjoy reading the comic strip?

You just read from the story how Tina's mother gave her helpful tips in cooking. You may have noticed that the preservation of the nutrients was given attention. Have you been given cooking tips before?

What are some of the cooking tips you know?

---

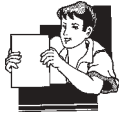
---

---

---

---

Where you able to list down the cooking tips you know? You will learn some cooking tips in the next activity.



## Let's Learn

There are proper ways of preparing and cooking our foods so that we preserve the different nutrients in them. You may have planned a healthy, balanced meal following the basic rules of nutrition. But, all the nutrients may be lost if the food is not prepared the proper way. In the end, we will not be getting the nutrients that our body needs to stay healthy and strong.

Below are cooking tips that will help preserve the nutrients in the foods that you prepare.

### Tip # 1

**Wash fruits and vegetables before peeling and cutting. If you have to soak fruits and vegetables after cutting, use water for cooking.**

Some minerals and vitamins are dissolved in water. They are lost when food is washed, soaked, and cooked in water. Washing the peeled or cut-up food will result in lots of nutrients being washed away, too. Remember that all B-vitamins and Vitamin C are water-soluble vitamins. Vitamin C is the most easily lost or destroyed.



### Tip # 2

**It is better to cook some vegetables without peeling them.**

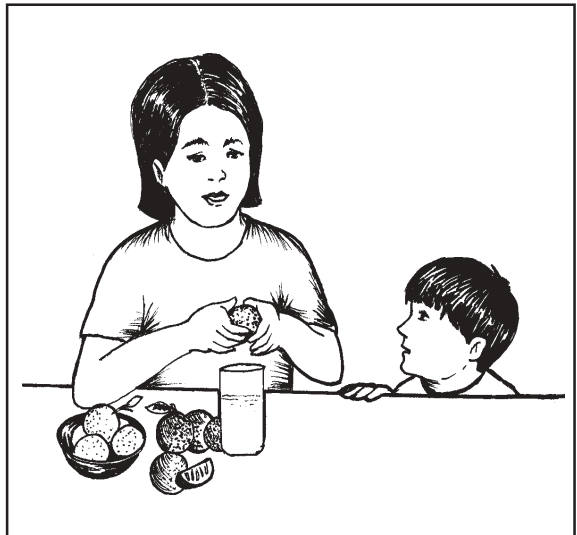
Most nutrients in fruits or vegetables are found in the skin or just beneath it. Vegetables like potatoes and sweet potatoes are best cooked with their skins or peels on. This ensures that the nutrients in the peel will not be lost.



### Tip # 3

**Cook and serve fruits and vegetables as soon as they have been cut. Squeeze fruit juices just before serving.**

Long exposure to air causes some vitamins to be lost. Vitamin C is the perfect example. It is easily destroyed when it comes in contact with oxygen. This process is called **oxidation**. Other vitamins that are easily oxidized are Vitamins A, B<sub>1</sub>, B<sub>12</sub>, and E.



### Tip # 4

**Keep the pot covered while cooking. This shortens cooking time.**

Covering the pot shortens the cooking time. Most vitamins are destroyed by high and prolonged heat. Some nutrients are sensitive even to moderate heat. These are vitamins B<sub>1</sub>, B<sub>12</sub>, B<sub>6</sub> and C.





**Tip # 5**

**Cook food over medium heat, not over high heat. Do not overcook food.**

Prolonged cooking at high temperature destroys most nutrients. Low temperature or medium heat in quick cooking saves nutrients, except for Vitamin C. Protein in food is destroyed by overcooking.



**Tip # 6**

**Avoid using baking soda when cooking vegetables.**

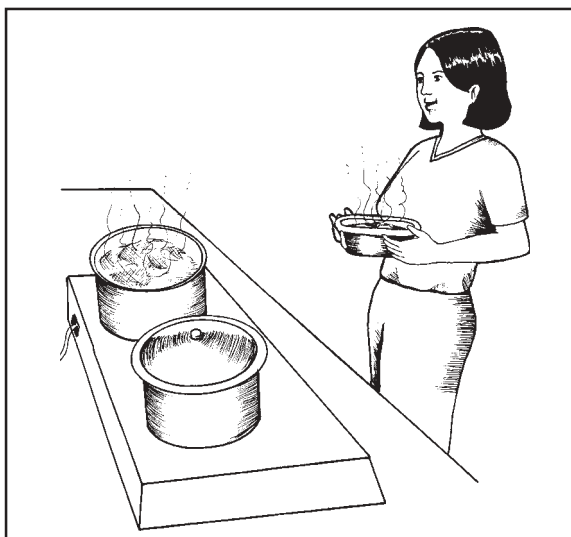
Baking soda is used in eateries to preserve the fresh green color of vegetables. Unfortunately, it destroys some vitamins.



**Tip # 7**

**Serve the food immediately after cooking. The shorter the time between cooking and serving, the more nutrients are saved.**

Long exposure to air results in lost nutrients. Exposure to light also destroys many vitamins. Almost all vitamins are sensitive to light.





## Let's Try This

Try observing the person who prepares or cooks food for your family. Then answer the following questions. Put a check mark (✓) in the proper column.

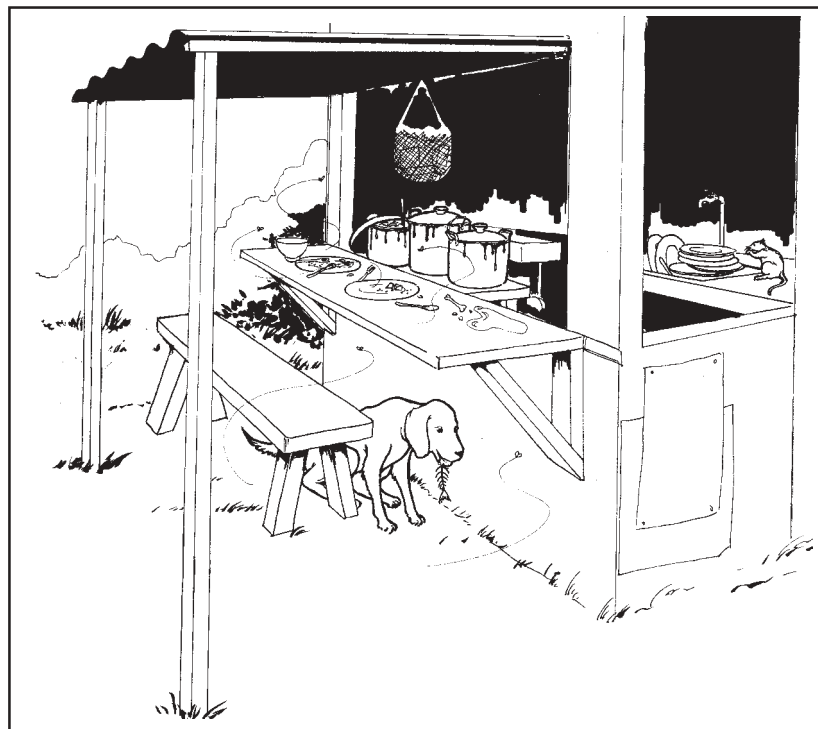
	Yes	No
1. Were the vegetables and fruits washed first before they were peeled and cut?		
2. Was the pot covered while the food was being cooked?		
3. Was medium heat used?		
4. Was the food served immediately after cooking?		

If your answer to any one of the questions is “no,” advise the person to read the tips that have been presented in this lesson. You may also explain them to him or her. Tell that person that proper food preparation and cooking will maximize the retention of nutrients in the foods.



## Let's Study and Analyze

Study Aling Lita's carinderia. Then answer the questions that follow.



1. Would you want to eat in this carinderia? Why or why not?

---

---

---

2. What things in the picture make you think that this carinderia is not a safe place to eat in?

---

---

---

Read on to find out if your ideas are correct.



## Let's Think About This

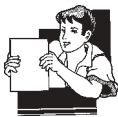
You probably have seen and even eaten in food stores or carinderias such as Aling Lita's. The food in these places may be inexpensive, but are they clean? It is possible that the foods they sell have not been properly handled. They may not have been washed and cleaned properly. They may have been contaminated by flies carrying germs. Food scraps may be scattered on the table and some food may drip on the sides of the pots. Rats and dogs may be roaming around. Would you want to eat in Aling Lita's carenderia? Why or why not? Write your answers in the blanks below.

---

---

---

Eating foods that have not been handled properly have ill effects to our health. This is why **food sanitation** and **food safety** are very important. The picture that has been shown to you is intended to make you aware that eating clean food is important to good health.



## Let's Learn

You may not be familiar with the two concepts that have just been mentioned earlier: **food sanitation** and **food safety**.

**Food sanitation** means keeping food clean and germ-free. If you practice food sanitation, it follows that you practice food safety.

What are germs?

Look at your hands. Are they clean? \_\_\_ Yes \_\_\_ No

Explain your answer.

---

---

---

Germs are present everywhere, all the time. Even when your hands don't have visible dirt, like mud and dust, germs are still present. You cannot see them because they are very little. That is why they are called **microorganisms**. **Micro** means "little" and **organisms** means "living things."



Microorganisms are present everywhere, even in our bodies. Some of them are harmless while others are harmful and deadly. The harmful microorganisms cause different diseases that may lead to death.

Eating foods with harmful microorganisms may cause infection, diseases, or poisoning inside the body. Anything that comes in contact with harmful microorganisms is said to be contaminated. How does food become contaminated?

Flies land on anything: from trash to food. Most of the time, they carry germs that contaminate food.

Body sweat and dirty nails may also contain microorganisms that contaminate food.

Sick people also carry germs that may contaminate the food he or she touches. When another person eats the contaminated food, he or she might get sick.



## Let's Think About This

Read the saying below:

An ounce of prevention is worth a pound of cure.

In your own words, explain what the saying means.

---

---

---

---

The saying tells us that little steps of prevention make a big difference. Curing an illness or disease requires much effort and money. On the other hand, preventing an illness does not cost as much. The simple washing of hands before eating may help us avoid getting sick and may save us a visit to the doctor. No matter how simple this habit may be, it helps keep us healthy and free from sickness or disease.



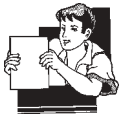
## Let's Study and Analyze

Study the conversation between a mother and her daughter. Then, answer the questions that follow.



1. Why is it important to wash vegetables and meat properly?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Why do we need to wash and clean the pots, pans and other utensils that we use in cooking?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Read on to find out if your answers are correct.



## Let's Learn

It is very important to wash and clean the vegetables, fruits and meat that we buy from the market. Have you been to a local wet market? There are flies everywhere. Many people touch the vegetables, fruit and meat. We cannot be sure what germs may be present in them.

Of course, we should also clean the pots, pans, and other utensils that we use for cooking. When we keep them in our cabinets, we do not know if they are free from germs. There is also the possibility that cockroaches and other pests may come in contact with them.

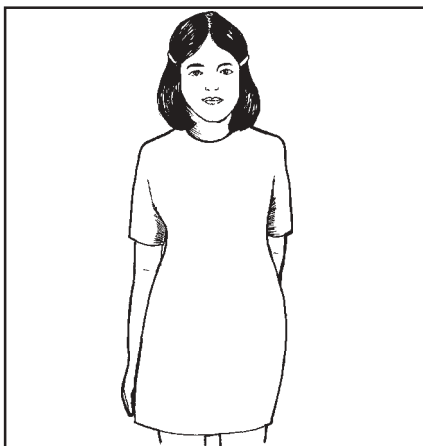
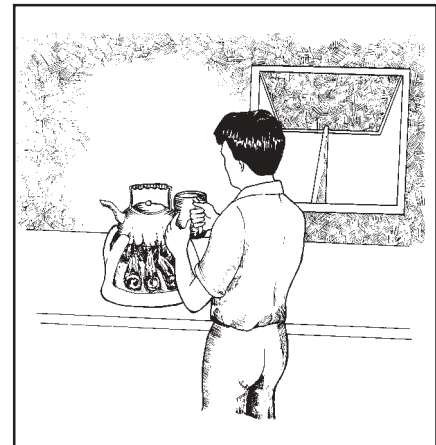
So, what are the different ways of practicing food sanitation?

Earlier, it has been mentioned that it is important to wash vegetables, fruits and meat very well. We are not sure of how they were handled before we bought them. To be sure that the vegetables are free from dirt, soil and germs, wash them carefully.

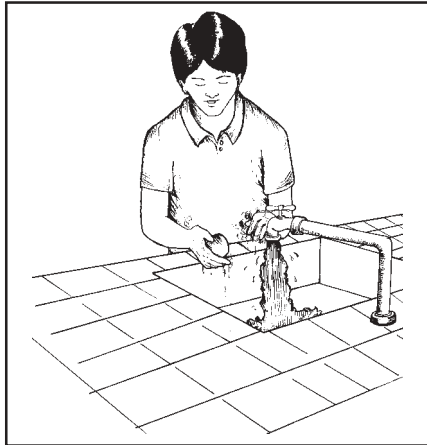


It is also important to clean the pots, pans, plates, and other kitchen utensils that you are going to use.

Be sure that the water that you use in cooking comes from a clean source. If you are not sure, you may boil the water to kill germs that may be present.



It helps that you fix your hair so that no strand or dirt may fall into the food.



You should always wash your hands before eating. We use our hands all the time and we touch various objects. Washing our hands decreases the possibility of carrying germs and contaminating the food we eat.

Cover the food to make sure that it does not get contaminated. This will keep flies and pests from coming in contact with them.

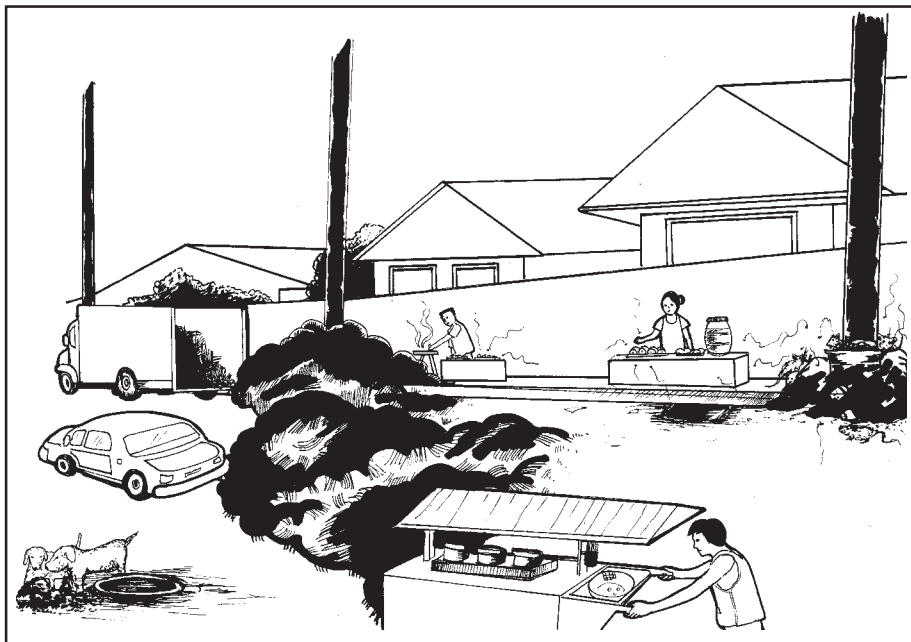


## Let's See What You Have Learned

- A. Match Column A with Column B by completing each sentence. Write the letter of the correct answer in the blank provided before each number.

Column A	Column B
___ 1. Using medium heat in cooking...	a. will preserve nutrients, especially those that are water-soluble.
___ 2. Putting a cover on the pot while cooking...	b. shortens cooking time.
___ 3. Washing vegetables and fruits before peeling and cutting them...	c. help to ensure that nutrients under the skin will not be lost.
___ 4. Cooking some vegetables before peeling them . . .	d. will prevent the loss of nutrients due to exposure to the air.
___ 5. Serving food right away . . .	e. prevents nutrients from being destroyed due to high heat or prolonged cooking.

B. Study the illustration below, then answer the questions that follow.



1. Do the vendors practice food sanitation? \_\_\_ Yes \_\_\_ No

Why, or why not?

---

---

---

2. What possible effects may this eating place have on your health?

---

---

---

You may compare your answers with those in the *Answer Key* on pages 56–57.

If you got all the answers correct, very good! This shows that you have learned a lot from this lesson. If you got a low score, you may have to review the lesson to understand it more clearly.



## Let's Remember

In this lesson, you have learned the following:

- ◆ Nutrients are conserved in food through proper methods of preparation, cooking and serving. Some cookings that you could follow in conserving nutrients are:
  - wash fruits and vegetables before peeling and cutting.
  - some vegetables should be cooked with their skin on.



- cook and serve fruits and vegetables as soon as they have been cut.
  - keep the pot covered while cooking to shorten cooking time.
  - cook food in medium heat and do not overcook food.
  - avoid using baking soda when cooking vegetables.
  - serve the food immediately after cooking.
- ◆ Food sanitation is very important in keeping our food healthy for our body's use. It keeps food clean and germ free, so we will not get sick when we eat them.



## Let's Sum Up

In this module, you have learned that:

- ◆ Our body needs five basic nutrients for maintaining health.
  - **Carbohydrates** are the main sources of the body's energy.
  - **Proteins** are the “building blocks” of our body. They are necessary for growth and repair of tissue.
  - **Fats and oil** are concentrated sources of energy. They are necessary for good health.
  - **Vitamins** are needed for growth and health. Each vitamin has specific roles to play in the body.
  - **Minerals** are inorganic substances that have different functions in the body.
- ◆ A balanced meal consists of the right amount of foods from the three food groups that provide us with needed nutrients.
  - Go foods are energy-giving foods. They are mostly rich in carbohydrates and fats.
  - Grow foods are body-building foods. They are rich in proteins.
  - Glow foods are body-regulating foods. They are rich in vitamins and minerals.
- ◆ We should use proper methods of preparation, cooking and serving to retain the nutrients in our food.
- ◆ It is important that we practice food sanitation. This prevents us from getting sick and helps us maintain a healthy lifestyle.



## What Have You Learned?

A. Read the sentences below. Choose the letter of the correct answer and write it on the blank.

- \_\_\_ 1. What substances found in food are essential for us to maintain a strong and healthy body?
- additives
  - nutrients
  - medicines
  - preservatives
- \_\_\_ 2. What nutrient do we need for growth and repair of body tissues?
- vitamins
  - minerals
  - proteins
  - fats and oil
- \_\_\_ 3. Which vitamin is needed for strong bones, good vision and healthy skin?
- Vitamin A
  - Vitamin C
  - Vitamin D
  - Vitamin K
- \_\_\_ 4. What mineral is important in developing healthy bones and teeth?
- calcium
  - phosphorous
  - sodium
  - potassium
- \_\_\_ 5. What does a balanced meal consist of?
- foods with additives and preservatives
  - carbohydrate-rich foods
  - the right amount of foods from the three food groups
  - fat-free foods, especially vegetables and fruits
- \_\_\_ 6. Your friend is sick. Which food group would he need the most?
- Junk foods
  - Go foods
  - Grow foods
  - Glow foods

- \_\_\_ 7. Jack is an athlete. He plays basketball and football. Which nutrient does he need the most?
- a. proteins
  - b. carbohydrates
  - c. vitamins
  - d. minerals
- \_\_\_ 8. Karen is four years old. Why does she need more protein in her diet?
- a. Because she needs plenty of energy for play
  - b. To make her skin healthy
  - c. To help her eliminate body waste
  - d. Because Karen is at her important stages of growth and development
- \_\_\_ 9. When should fresh fruits and vegetables be washed?
- a. Before peeling
  - b. After cooking
  - c. During serving
  - d. Before cooking
- \_\_\_10. Which is NOT a way to keep food clean and germ-free?
- a. Cleaning pots and pans used in cooking
  - b. Washing our hands before eating
  - c. Using clean water in cooking
  - d. Allowing food to stay uncovered (exposed)

B. Study the given situations. Answer the questions that follow.

1. Your mother asked you to plan the family dinner. What foods will you include to make sure that your family will get a balanced meal? Why?

---

---

---

---

---

2. In preparing the foods you have just planned, how you will make sure that their nutrients are preserved?

---

---

---

---

---

3. How will you keep the foods clean and germ-free for your family?

---

---

---

---

---

You may compare your answers with those in the *Answer Key* on pages 57–59.

For part A, check your score against the scale below. If you got:

- |     |   |
|-----|---|
| 10  | Excellent! You learned much from this module. You may now proceed to the next module. |
| 8–9 | Very good! You may return to the important points you have missed.                    |
| 6–7 | Good! You need to review the lessons you don't fully understand.                      |
| 0–5 | You may need to study the module once more.   |



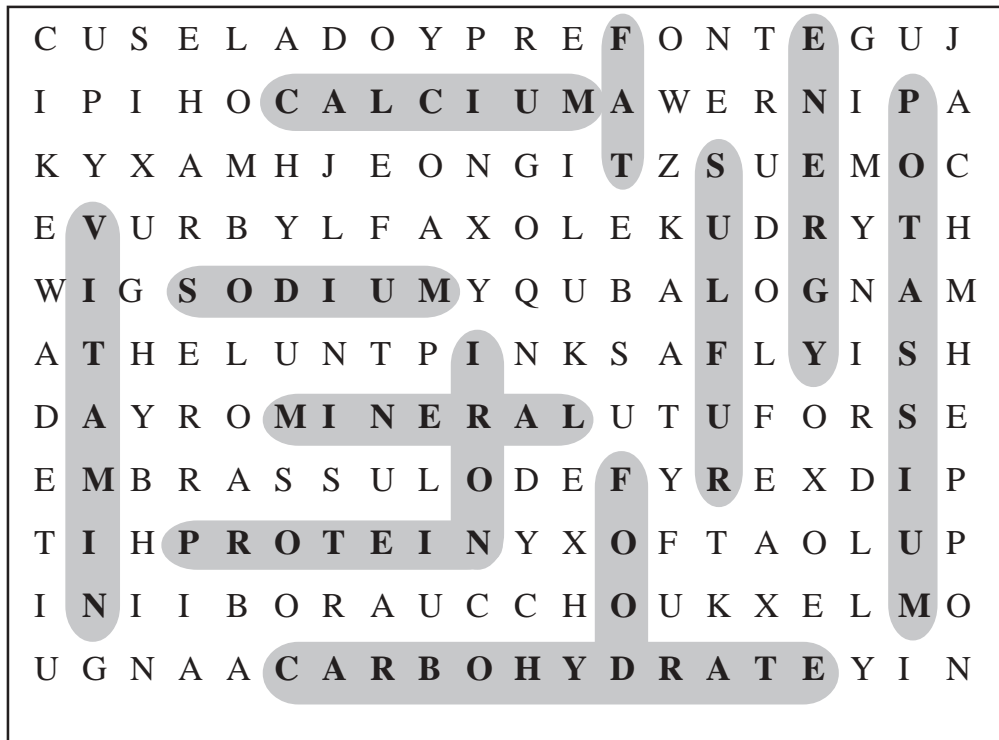
## Answer Key

### A. Let's See What You Already Know (page 2)

1. **Nutrients** is the answer. They are the substances needed by the body for maintaining good health.
2. **Proteins** is the answer. They are the nutrients we need for growth and to repair tissues that have been damaged.
3. **Balanced meal** is the answer. A balanced meal consists of the right amount of Go, Grow, and Glow foods.
4. **Go** is the answer. Go foods provide us with energy for our daily activities.
5. **Calcium** is the answer. It is a mineral that is the most abundant in the body. It is essential for the development of bones and teeth.
6. **Vitamin C** is the answer. Vitamin C and the B-vitamins are easily dissolved in water.
7. **Potatoes** is the answer. Potatoes are among the common sources of carbohydrates, the energy-giving nutrients.
8. **Vitamin A** is the answer. It is important in developing strong bones, good eye sight, and healthy skin.
9. **Washed** is the answer. When preparing vegetables, it is better to wash them first before you peel or cut them, so the nutrients in them may be preserved.
10. **Baking soda** is the answer. Baking soda is used to preserve the fresh-green color of vegetables. However, they tend to destroy the vitamins in the vegetables.

## B. Lesson 1

*Let's Try This (page 5)*



*Let's Study and Analyze (page 8)*

Your answer should be similar to this:

I would eat Set A because it contains rice, corn, potatoes, and pancit. These foods contain carbohydrates, in the form of starch, which give me energy for my daily activities. They are also rich in fiber to help me in eliminating body wastes. Although the foods in Set B are also energy-giving foods, their carbohydrates are in the form of sugar. Sugar is not an essential carbohydrate. Also, too much sugar in these foods may cause tooth decay.

*Let's Study and Analyze (page 9)*

- \_\_\_\_\_ 1. nuts and fruits
- \_\_\_\_\_ 2. fish and mungo beans
- 4   3. rice and *kangkong*
- \_\_\_\_\_ 4. apple and banana
- 4   5. chicken and mushrooms

*Let's Try This (page 11)*

1. \_\_\_ butter  
  4 margarine
2. \_\_\_ coconut oil  
  4 olive oil
3. \_\_\_ palm oil  
  4 peanut oil

The foods that have been checked all contain unsaturated fats, while the others contain saturated fats. Unsaturated fats tend to lower blood cholesterol, while saturated fats tend to increase it. So, foods rich in unsaturated fats are better choices over those rich in saturated fats.

*Let's Try This (page 16)*

Below is a sample chart.

<b>Vitamin</b>	<b>Food Sources</b>
Vitamin A (retinol)	green, leafy and yellow vegetables, yellow fruits, eggs, organ meats, shellfish and marine oil.
Vitamin B <sub>2</sub> (riboflavin)	milk, eggs, peas, beans, lentils, yeast, whole-grain products and green leafy vegetables
Vitamin B <sub>3</sub> (niacin)	milk, eggs, fruits, fresh green vegetables and whole grains
Vitamin B <sub>6</sub> (pyridoxine)	whole grains, legumes, most fresh foods, pasteurized milk and evaporated milk.
Vitamin C	oranges, tomatoes, avocados, other fresh fruits in season and most vegetables
Vitamin D	egg yolk, cod-liver oil, milk
Vitamin E	whole grains cereals, green vegetables, olive oil, coconut oil and other vegetable oils
Vitamin K	all green vegetables, soybeans and tomatoes

*Let's Study and Analyze (page 18)*

1. My neighbor would need much calcium. Calcium helps in the regulation of the heart beat.
2. He may lack potassium in his diet. Potassium helps stimulate the normal movement of the intestinal tract. If he includes potassium in his diet, his large intestines may start to function normally for him to be able to remove his body wastes.
3. The girl needs phosphorous. Phosphorous will help her body absorb the components or nutrients in her diet.

*Let's See What You Have Learned (pages 19–20)*

- (c) 1. is the correct answer. Nutrients are the substances in food that are essential in maintaining a healthy body. Medicines are artificially made and are usually taken only when one is sick. Diet refers to the food one eats. Additives are not found naturally in food. They are added to food to enhance flavor or color and they may even have harmful effects to the body.
- (a) 2. is the correct answer. A balanced meal contains foods that are nutritious and in the proper amounts. Junk foods and instant meals contain little nutrients and may even be harmful to one's health. Preservatives are substances added to food to maintain freshness or color. Some preservatives may be harmful to one's health.
- (d) 3. is the correct answer. Lumpiang shanghai and rice make the most nutritious combination among the choices. The other combinations contain little nutrients and may even be harmful, especially if one eats too much of them.
- (c) 4. is the correct answer. Carbohydrates is the primary source of energy. Proteins are used for growth and tissue repair. Vitamins and minerals do not produce energy, although they help in the processes for energy-production.
- (a) 5. is the correct answer. Proteins repair tissues. It is the fats that maintain the body temperature. Carbohydrates supply us with energy. Vitamin K aids in blood clotting.
- (d) 6. is the correct answer. Heart attacks result from excessive intake of saturated fats. Saturated fats tend to increase cholesterol. When too much cholesterol has clogged the blood vessels, especially the vessels in the heart, blood may not flow smoothly and a heart attack may occur. Excessive bleeding occurs when there is an absence of Vitamin K in the diet. Poor eyesight results from lack of Vitamin A.
- (a) 7. is the correct answer. Fish and rice provide complete proteins. The other combinations only provide incomplete proteins.
- (c) 8. is the correct answer. Calcium is the basic and most important mineral for the development of bones and teeth. Potassium aids in the formation of proteins and in energy production. It also stimulates the normal movement of the intestinal tract. Sodium helps in the production of energy and in the transport of amino acids into the body. Phosphorous aids in the absorption of dietary components and is involved in structural development and production of energy.
- (c) 9. is the correct answer. Beri-beri results from the lack of Vitamin B<sub>1</sub> or thiamine in the diet. People suffering from this disease experience loss of appetite and overall tiredness, irregularities in digestion, and a



feeling of numbness and weakness in the limbs and extremities. Scurvy is due to a deficiency in vitamin C or ascorbic acid. Pellagra results from the absence of vitamin B<sub>3</sub> or niacin in the diet. Anemia may be due to the absence of vitamin B (cyanocobalamin) or vitamin K.

- (a) 10. is the correct answer. Potassium aids in the normal movement of the intestinal tract. This includes normal elimination of wastes or bowel movement. Sodium helps in the production of energy and in the transport of amino acids in the body. Calcium is for the structural development (bones and teeth). Chloride is for the production of the fluid or juice used in digestion.

### C. Lesson 2

*Let's Try This (pages 22–23)*

Here are sample answers. Your answers may be different.

<b>Lunch</b>	
◆	steamed rice
◆	<i>sinigang na bangus</i> with <i>kangkong</i> and <i>gabi</i>
◆	banana

1. The foods that gave me proteins were rice, *sinigang na bangus*, *kangkong*, and *gabi*.
2. The foods that gave carbohydrates were rice and *gabi*. *Sinigang na bangus* gave me fats.
3. The foods that gave vitamins and minerals were *bangus*, *kangkong*, *gabi*, and banana.
4. I had a balanced meal because it contains foods that come from the three food groups, giving me the different nutrients my body needs.

*Let's Try This (pages 28–29)*

1. **(a)** Go foods is the answer. Go foods are rich in carbohydrates which supply the body with energy. Since Ramon is a very active boy, he needs lots of energy for his many activities. Go foods will supply him the energy he needs.
2. **(c)** Glow foods is the answer. Vitamin C is a nutrient abundant in Glow foods, like calamansi.
3. **(b)** Grow foods is the answer. The baby is at his important stages of growth and development. He needs foods rich in protein for him to develop strong bones and teeth.

*Let's Think About This (pages 29–30)*

Here is a sample plan of meals for Mike.

Breakfast	Lunch	Dinner
<ul style="list-style-type: none"><li>◆ 1 cup rice</li><li>◆ 2 slices <i>tapa</i></li><li>◆ 1 piece banana</li><li>◆ 1 glass water</li></ul>	<ul style="list-style-type: none"><li>◆ 2 cups rice</li><li>◆ 1 bowl <i>sinigang na baka</i></li><li>◆ 1 slice papaya</li><li>◆ 1 glass water</li></ul>	<ul style="list-style-type: none"><li>◆ 1 cup rice</li><li>◆ 1 small plate <i>adobong manok</i></li><li>◆ 1 medium-sized banana</li><li>◆ 1 glass water</li></ul>

Each meal in the table contains the right amount of foods from the three food groups. All are balanced meals because they contain the different basic nutrients in the right amounts.

*Let's See What You Have Learned (pages 31–32)*

- (d) 1. is the right answer. Go foods are the carbohydrate-rich foods. Grow foods are protein-rich. Glow foods mostly contain vitamins and minerals. Junk foods is not a food group.
- (a) 2. is the right answer. A balanced meal consists of the right amount of foods from the three food groups, providing the body with needed nutrients. Junk foods don't contain enough of the important nutrients the body needs. A vegetarian meal consists of Glow foods that are rich mostly in vitamins and minerals. An instant meal, like instant noodles, may not have all the essential nutrients and does not consists of foods coming from the three basic food groups.
- (c) 3. is the right answer. Fruits and vegetables are Glow foods. Rice and cereal are Go foods. Chicken and fish are Grow foods. Bread is a Go food and butter is a Grow food.
- (b) 4. is the right answer. Body-building foods are called Grow foods. They contain proteins for development of bones and muscles. Go foods are energy-giving foods, rich in carbohydrates. Glow foods are body-regulating foods, rich in vitamins and minerals. Junk foods have little nutrients and is not a basic food group.
- (d) 5. is the right answer. Pasta and pancit are Go foods. They are rich in carbohydrates.
- (a) 6. is the right answer. Glow foods are body-regulating food. They regulate the body processes for our maximum performance in daily activities. Go foods are the energy-giving foods. Grow foods are the body-building foods. There is no group for muscle-building foods, though foods that help develop the muscles may fall under the body-building foods.

- (b) 7. is the right answer. Fruit salad and pineapple juice contain mostly vitamins and minerals. For a balanced breakfast, you also need foods rich in carbohydrates, proteins, and fats. The other meals are balanced because they come from the three basic food groups. So, they contain all the basic nutrients needed by the body.
- (a) 8. is the right answer. Since Jack is an active boy, he needs plenty of carbohydrates. Go foods are rich in carbohydrates. Junk foods contain a little amount of nutrients and they are not all nutritious. Glow foods contain vitamins and minerals for body regulation. Grow foods contain proteins for body building.
- (c) 9. is the right answer. Grace needs foods rich in proteins that will enable her to grow healthy and develop strong bones and muscles. Fats and oils and carbohydrates supply energy. Vitamins and minerals help regulate the various body processes, like digestion and bowel movement.
- (b) 10. is the right answer. Glow foods provide us with vitamins and minerals to help normalize our body's processes, especially when we are sick. Vitamin C is especially good to increase our resistance against sickness. Grow foods are for growth and development. Go foods are for supply of energy. Junk foods provide little nutrients and may even worsen one diseases or illness.

#### **D. Lesson 3**

*Let's See What You Have Learned (pages 44–45)*

- (e) 1. is the correct answer. Cook food in medium heat, not in high heat. Do not overcook the food. Prolonged cooking at high temperature destroys most nutrients. Low temperature or medium heat in quick cooking saves nutrients, except for vitamin C. Protein in foods is destroyed by overcooking.
- (b) 2. is the correct answer. Keep the pot covered while cooking. This shortens cooking time. Covering the pot shortens the cooking time. Most vitamins are destroyed by high and prolonged heat. Some nutrients are sensitive even to moderate heat. These are vitamins B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, and C.
- (a) 3. is the correct answer. Wash fruits and vegetables before peeling and cutting. If you have to soak fruits and vegetables before cutting, use the water for cooking. Some minerals and vitamins are dissolved in water. They are lost when food is washed, soaked, and cooked in water. Washing the peeled or cut-up food

will result in lots of nutrients being washed away, too. All B-vitamins and vitamin C are water-soluble vitamins. Vitamin C is the most easily lost or destroyed.

(c) 4. is the correct answer. It is better to cook vegetables such as potatoes and kamote with their peels on. Most nutrients in fruits or vegetables are found in the skin or just beneath it. So, not peeling these vegetables will assure that nutrients in the peel will not be lost.

(d) 5. is the correct answer. Serve the food immediately after cooking. The shorter the time between cooking and serving, the more nutrients saved. Long exposure to air results in lost nutrients. Exposure to light also destroys many vitamins. Almost all vitamins are sensitive to light.

B. 1. No. The vendors do not practice proper food sanitation. The place where they sell food is close to a garbage can where there are many flies, insects, and pests. These pests that carry germs harmful to the body may contaminate the food being sold. There is also an open manhole, which may be another source of harmful microorganisms.

Also, the foods are not properly covered against dust, dirt, and pollution coming from the vehicles that pass on the road.

2. Eating in unsanitary places such as this one may result in various health problems. Harmful germs and bacteria may be present in the food and cause diseases. Eating dirty food may cause digestive disorders, even poisoning. We may also get diarrhea, hepatitis B, tuberculosis, and other diseases because of the many harmful microorganisms in the area.

#### E. What Have You Learned? (pages 47–49)

A. (b) 1. is the answer. **Nutrients** are the substances found in food that are essential in maintaining a strong and healthy body. Additives are artificial or man-made substances added into food to enhance flavor or color. They may be harmful to the body. Medicine are prescribed substances for an illness or disease. Preservatives are substances put into food to preserve color or freshness. Like additives, they may be harmful to our health.

(c) 2. is the answer. **Proteins** are the nutrients that we need for growth and repair of body tissues. Vitamins and minerals are for regulating body processes. Fats and oils are concentrated sources of energy.

(a) 3. is the answer. **Vitamin A** is needed for strong bones, goods, and healthy. Vitamin C or ascorbic acid is important in wound-healing and collagen-formation. Vitamin D helps to strengthen bones and teeth. Vitamin K aids in blood clotting.

- (a) 4. is the answer. **Calcium** is the mineral that is essential in developing healthy bones and teeth. Phosphorous helps the body to absorb the nutrients in food. Sodium helps in the production of energy and the transport of amino acids in the body. Potassium helps in the normal movement of the intestinal tract.
- (c) 5. is the answer. A balanced meal consists of **the right amounts of foods from the three food groups**. These are the Go, Grow, and Glow foods. They do not consist of additives and preservatives. They do not consist only of one food group, like carbohydrate-rich foods of Go foods. And, if a meal is fat free, it lacks a basic nutrient found in a well-balanced meal.
- (d) 6. is the answer. **Glow foods** contain vitamins and minerals needed by the body to normalize its functioning, especially when one is sick. Junk foods contain only small amounts of nutrients and may even be harmful to one's health, especially to a sick person. He still needs Go and Grow foods, but his body needs more of the Glow foods.
- (b) 7. is the answer. Jack needs much energy. He needs plenty of **carbohydrates**. Proteins are for body-building. Vitamins and minerals are body-regulating nutrients.
- (d) 8. is the answer. **Karen is at her important stages of development**. She needs plenty of proteins for growth and development.
- (a) 9. is the answer. Fresh fruits and vegetables should be washed **before peeling**. Washing the peeled or cut-up food will result in lots of nutrients being washed away, too.
- (d) 10. is the answer. One should **not allow food to stay uncovered**. This will attract flies and other pests that may contaminate the food with disease-causing germs and bacteria.

B. Here are some sample answers. Your answers may be different from these. Show your answers to your Instructional Manager for additional feedback.

1. The foods I will include for dinner are: nilagang baka, steamed rice, ginisang gulay, and bananas. The foods I plan to serve my family make up a balanced meal, with nutrients they need to remain healthy and strong.
2. To make sure that I will preserve the nutrients in the foods that I will prepare, I will wash the fruits and vegetables before I peel them. I will cook them as soon afterwards. I will keep the pot

covered when I cook them, making sure I use medium heat. I will serve the food immediately.

3. To keep the foods clean and germ-free, I will wash my hands before I handle any of the foods. I will wash the meat, fruits, and vegetables properly, and also the pots, pans, and other utensils that I will use for cooking. I'll keep my hair neat to prevent any strand or dirt from falling into the food. Also, I will make sure that the foods are well-covered as I wait for my family to come to the table and enjoy the meal.



## Glossary

**Amino acids** Simpler substances that make up proteins

**Anemia** A disorder wherein there is a low count of blood cells

**Balanced diet** A meal that is composed of the right amounts of foods from the three basic food groups (Go, Grow, and Glow)

**Beri-beri** A disease with symptoms of swelling in different parts of the body, difficulty in breathing, and pains over the heart; due to a deficiency in vitamin B<sub>1</sub>

**Carbohydrates** Are energy-giving nutrients

**Cholesterol** A natural waxy substance that helps form digestive juices and make Vitamin D. Too much cholesterol is harmful for our body.

**Clotting** The clumping of the blood when it is exposed to air; prevents loss of blood due to continuous bleeding

**Complete Proteins** Proteins that contain all the vital substances, called amino acids that our body needs for growth and daily functioning

**Fats** Are nutrients that contain concentrated forms of energy

**Fiber** A complex form of carbohydrates that aids in the removal of wastes and toxins from our body

**Food sanitation** Practices that keep food clean and germ-free

**Go foods** Are energy-giving foods that mostly contains carbohydrates and fats

**Glow foods** Are body-regulating foods that mostly contain vitamins and minerals

**Grow foods** Are body-building foods that mostly contain proteins

**Incomplete Proteins** Proteins that lack one or more essential amino acids

**Microorganisms** Very tiny living things that cannot be seen by the naked eye; they may be beneficial or harmful to the body

**Nutrients** Substances that are essential for us to maintain our overall health

**Oil** Liquid fats

**Oxidation** Destruction of vitamins when exposed to air

**Pellagra** A disease wherein the skin becomes rough, and the person suffers from a gradual loss of strength; due to a deficiency in vitamin B<sub>6</sub>

**Protein** Nutrients for body-building and tissue repair

**Rickets** A disease due to lack of Vitamin D

**Scurvy** A disease with symptoms of includes swelling of the legs and feet; due to the absence of vitamin C in the diet



## References

Due North Marketing: (1999). *Nutrients*.

<http://www.linksnorth.com/nutrition/nutrients.html>. January 9, 2000, date accessed.

Maskay, Manisha Harisingh. (1998). *Vitamins*. The Learning Company, Inc.

<http://www.comptons.com/encyclopedia/ARTICLES/0175/01901312A.html>. January 9, 2001, date accessed.

Nutrition Health Reports. (2000). *Minerals*

<http://www.nutritionalhealthreports.com/minerals.html>. January 9, 2001, date accessed.

Tefler, Nancy. (2000). *Super Health*.

<http://www.cyg.net/~ngtelf/health.html>. January 9, 2001, date accessed.

The Doctor's Medical Library. (2000). *A Short History of Vitamins*.

[http://www.medical-library.nets/sites/history\\_of\\_vitamins.html](http://www.medical-library.nets/sites/history_of_vitamins.html). January 9, 2001, date accessed.