



LIFE·PAC®

# Family and Consumer Science

Student Book

Unit 3



Alpha Omega Publications®

# FAMILY AND CONSUMER SCIENCE LIFE PAC 3

## LET'S EAT

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# LET'S EAT

Making sure you get the right amount of nutrients every day will help you feel better and in turn look better. By eating a variety of foods, you will get the right amount of necessary nutrients that will help your body grow, develop, and work properly. Select foods from MyPlate throughout the day to make sure you get the right amounts of nutrients. This LIFEPAC® will explain good nutrition, how to select nutritious foods, and how to cope with special diet needs. Sitting down to a glorious meal with friends takes much planning and preparation.

This LIFEPAC will teach you to plan menus, buy groceries, and prepare that scrumptious meal as well as how to set the table and serve your guests. Have fun with the many hands-on projects you are about to experience.

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## OBJECTIVES

**Read these objectives.** The objectives tell you what you will be able to do when you have successfully completed this LIFEPAC.

When you have completed this LIFEPAC, you should be able to:

1. Explain proper nutrition.
  2. Identify the six main nutrients, their sources, and their uses by the body.
  3. Identify the groups in MyPlate.
  4. Understand the Dietary Guidelines for Americans.
  5. Identify special dietary needs.
  6. Demonstrate different techniques in food preparation.
  7. Demonstrate skill in preparing various food items.
  8. Demonstrate skill in planning menus.
  9. Demonstrate skill in making a grocery list and purchasing the groceries.
  10. Identify the different types and styles of table service.
  11. Demonstrate skill in table setting and table waiting.
- 
-

# I. NUTRITION

Nutrition is the result of the processes your body follows to use the food you eat. When you eat food to keep your body working properly, you are practicing good nutrition. What you eat now not only affects how you feel and look today, it also affects your future health. Your body and mind are growing at a rapid rate. Eating the proper foods will help you develop to the fullest extent possible.

The right amount of nutrients such as carbohydrates, fats, vitamins, minerals, protein, and water can improve the way you look and feel. Some nutrients affect your skin and hair, while others affect teeth and bones. An understanding of how to select the right foods from MyPlate will help you maintain the balance of nutrients that your body needs.

Learning to prepare for special diet needs will make you a more versatile cook who will be able to meet the nutritional needs of others. It should help you to strive to improve your eating habits now to avoid some of the diseases and health problems that develop later in life because of poor eating habits.

## SECTION OBJECTIVES

**Review these objectives.** When you have completed this section, you should be able to:

1. Explain proper nutrition.
2. Identify the six main nutrients, their sources, and their uses by the body.
3. Identify the groups in MyPlate.
4. Understand the Dietary Guidelines for Americans.
5. Identify special dietary needs.



## NUTRIENTS

Food performs three essential services in the body: heat and energy, building and repairing body tissues and regulation of body processes. Nutrients are the chemical substances in food that are used by your body to keep it going. Six different nutrients are needed to keep your body healthy. They are proteins, carbohydrates, fats, vitamins, minerals, and water. People differ in the amounts of nutrients needed. We all need different amounts of energy. Traits that determine your daily requirements are your size, your age, your sex, your spiritual tone or emotions, the amount of activity you participate in and your **metabolism**. A balanced diet gives you enough nutrients and energy for you as a unique individual. The principle of individuality from LIFEPAC 1 states that we are made in the image of God but have our own unique qualities and needs. Therefore, although we all need the essential nutrients to stay healthy, our dietary needs and amounts of each nutrient may be different.

Nutrients work together in teams. All the team members must be there at the same time and in the right amounts. An extra amount of one nutrient can't make up for the lack of another. Your body needs about forty nutrients to keep it healthy. Nutrients are chemicals that build and repair body tissues. Each nutrient has a special use in the body.

Let's look at the six main nutrients, their sources and what they do for our bodies.

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**NOTE:** Student, you should refer to the vocabulary words used in LIFEPAC 2: Mixing Terms, Cooking Terms, and the Glossary, throughout this LIFEPAC where needed.



## PROTEIN

Much of your body is made up of protein. Protein is used to build and repair tissues, to promote growth, to furnish heat and energy, and to assist in regulating body processes. Protein helps your body fight infections as well.

Protein is made up of smaller building blocks called amino acids. Complete proteins contain all the amino acids necessary to make body tissue. Sources of complete proteins are meat, eggs, and milk. Incomplete proteins are lacking in one or more essential amino acids. Plant products are incomplete proteins. These include fruits, vegetables, and grains. When you eat incomplete proteins you must put two or more together to get complete protein nutrition. Eating combination foods such as macaroni and cheese or a peanut butter sandwich on whole wheat bread will give you all the protein you need.

## CARBOHYDRATES

Carbohydrates are the best source of energy. They provide the body with most of the energy it needs. Your brain, nerves, and muscles must have carbohydrates in order to work properly. Starch, sugar, and fiber are carbohydrates. Simple carbohydrates such as sugar can be used by your body for quick energy. They provide calories but few other nutrients. Sugars are found in fruit and vegetables. Candy, soft drinks, and desserts are high in sugar, as well. Sugar is also added to many foods such as catsup, peanut butter, and cereal.

*Carbohydrates*



*Complex Carbohydrates*



Starches are the main source of carbohydrates in the diet. Starches are complex carbohydrates. Complex carbohydrates are digested much more slowly than sugars. Whole grains and vegetables are high in complex carbohydrates. Legumes such as peas, beans, and seeds are high in complex carbohydrates. Bread, rice, and pasta are very good sources, too. Complex carbohydrates give us calories for energy. The amount of carbohydrates needed each day depends on a person's activities. Eating more carbohydrates than you need can cause weight gain. This is because your body stores starch and sugar that you do not need for energy as fat. If you do not eat enough carbohydrates you may feel tired.



**Thin person + too many carbohydrates = overweight person asleep on the couch.**



**Thin person + proper amount of carbohydrates = person exercising.**

Fiber is found in carbohydrates. Most fiber is complex carbohydrates. Fiber is a plant material that humans cannot digest. Fiber helps to regulate the bowel by helping to digest (break down) the food and get rid of body wastes. It helps prevent **constipation**. Fiber is found in fruits, vegetables, and grains.

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## **FATS**

Your body needs fats in order to stay healthy and alive. Fats help your body use Vitamins A, D, E, and K. They also give your body energy. Your body needs some fat for the growth and development of healthy tissues. Fats also keep your skin from drying out. You need to eat only a small amount of fat each day. Fatty foods are high in calories. A teaspoon of fat has more than twice the calories than a teaspoon of sugar.

**one teaspoon of butter vs one teaspoon sugar  
33 calories vs 15 calories!**

There are two kinds of fat. Saturated fats are usually solid at room temperature. Most come from animal fat such as meat, butter, cream, and milk. Polyunsaturated fats are usually oils. They are found in fish and most vegetable oils.

## WATER

You can live longer without food than you can without water. Too little water causes kidney damage. Water helps your body by getting rid of waste. It helps control body temperature. Blood is made up of mostly water; it helps move nutrients around. You should drink at least eight glasses of water each day.



**Answer the following questions.**

- 1.1 Name the six nutrients.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
- 1.2 Are complete proteins found in animal foods or plant foods? \_\_\_\_\_
- 1.3 Which nutrient is the best source of energy? \_\_\_\_\_
- 1.4 Plant proteins are \_\_\_\_\_ proteins.
- 1.5 Which nutrient is best used to build and repair tissues? \_\_\_\_\_
- 1.6 \_\_\_\_\_ help your body use vitamins A, D, E, and K.
- 1.7 \_\_\_\_\_ is a complex carbohydrate that helps regulate the bowel.
- 1.8 Your body stores \_\_\_\_\_ to use for energy later.
- 1.9 The amount of carbohydrates needed each day depends on a person's \_\_\_\_\_.
- 1.10 Foods such as pasta are a good source of \_\_\_\_\_.



**True or False.**

- 1.11 \_\_\_\_\_ Starch is bad for you.
- 1.12 \_\_\_\_\_ Sugar is higher in calories than fat.
- 1.13 \_\_\_\_\_ Too little water can cause kidney damage.
- 1.14 \_\_\_\_\_ Good nutrition means eating a healthy diet.
- 1.15 \_\_\_\_\_ Vegetables contain complex carbohydrates.

## VITAMINS

Vitamins are substances needed by the body for growth and maintenance. Vitamins also help regulate the chemical processes in your body. They help your body store and use energy for growth and development. Although required in very small amounts, vitamins are essential to life and health.

Vitamins are found in tiny amounts in food. Vitamins that cannot be stored by the body are called water soluble vitamins. Vitamin C and the B vitamins are water soluble; they dissolve in water. You cannot get too many of these vitamins and any excess taken in is lost in the urine.

Vitamin C (Ascorbic Acid) is necessary to the health of every cell in the body, especially the blood vessels. It helps produce a substance that holds body cells together. It helps broken bones mend and wounds to heal. It helps you to resist infection and helps maintain healthy skin, gums, and teeth. Since Vitamin C is water soluble and not stored in the body, you should eat foods rich in Vitamin C each day.

Vitamin C is found in many fruits and vegetables. Citrus fruits such as oranges and grapefruit are great sources as well as cantaloupe, strawberries, broccoli, and tomatoes.

The B vitamins are a group of vitamins that work together in your body. Three key B vitamins are thiamin (B<sub>1</sub>), riboflavin (B<sub>2</sub>), and niacin (B<sub>3</sub>). These vitamins promote growth, good appetite, and proper digestion. They help keep your nervous system healthy and prevent irritability. They also keep your skin healthy.

Like Vitamin C, the B vitamins are water soluble so you need to include them in your diet every day. Sources of B vitamins are plentiful. Foods that are rich in B vitamins are whole grains and enriched breads and cereals. Leafy green vegetables, legumes, meat, milk, and eggs are also good sources.



**Vitamin C**



**Vitamin B**



### Fill in the blanks.

- 1.16 Vitamins are substances that are needed by the body for \_\_\_\_\_ and maintenance.
- 1.17 Vitamins that \_\_\_\_\_ are water soluble.



### Write *C* in front of the phrase that tells something about Vitamin C and write *B* in front of the phrase that tells something about the B vitamins.

- 1.18 \_\_\_\_\_ helps keep teeth and gums healthy
- 1.19 \_\_\_\_\_ is found in meat and whole grains
- 1.20 \_\_\_\_\_ is found in citrus fruits
- 1.21 \_\_\_\_\_ helps resist infection
- 1.22 \_\_\_\_\_ helps promote proper digestion

Other vitamins can be stored by the body and are called fat-soluble vitamins. They are Vitamins A, D, E, and K. Vitamin pills which contain high levels of fat-soluble vitamins are harmful. Your body cannot get rid of the extra amounts. It is better to get these vitamins from the foods that you eat. Each vitamin has a special function in the body. Each is needed for good health.

Vitamin A is necessary for healthy skin and mucous membranes, sound teeth, strong bones, and growth. It is important for vision, especially night vision.

Your body can make Vitamin A from carotene. **Carotene** is found in dark green and yellow vegetables: spinach, winter squash, carrots, sweet potatoes, cantaloupe, and apricots. You can also get some ready made Vitamin A in animal foods like liver, eggs, butter, and cream.



Vitamin D helps your body use the minerals needed for strong bones and teeth. This function is especially important when your body is growing and developing. Vitamin D is sometimes called the “sunshine” vitamin because your body can make Vitamin D when exposed to sunlight. Fortified milk is a good source of Vitamin D. Cod liver oil and other fish are sources of Vitamin D, too.

Vitamin E is believed to keep the oxygen in the body from destroying nutrients, especially Vitamin A. So many foods contain Vitamin E that people rarely suffer from deficiencies. Some important sources are vegetable oils, whole grain breads and cereals, eggs, organ meats, and green leafy vegetables.

Vitamin K helps to clot the blood. Many foods contain Vitamin K so deficiencies are rare. Some important sources are green leafy vegetables, cauliflower, liver, and eggs.



**Answer the following questions.**

- 1.23 Vitamins that can be stored by the body are called \_\_\_\_\_ .
- 1.24 Vitamin \_\_\_\_\_ is important for vision and is found in dark \_\_\_\_\_ and \_\_\_\_\_ vegetables.
- 1.25 Vitamin \_\_\_\_\_ is the “sunshine” vitamin.
- 1.26 Vitamin D is important for strong \_\_\_\_\_ and \_\_\_\_\_ .
- 1.27 What is a good food source of Vitamin D? \_\_\_\_\_
- 1.28 Which vitamin helps the oxygen in the body from destroying nutrients? \_\_\_\_\_
- 1.29 What is the primary function of Vitamin K? \_\_\_\_\_



**MINERALS**

Minerals are another kind of nutrient needed for a healthy body. Minerals help to regulate many of your body’s activities. They help muscles contract and nerves transmit signals to and from the brain. They also help maintain the body’s water balance and build strong blood, bones, and teeth.



Although there are many needed minerals, the most important are calcium, phosphorous, chlorine, potassium, and sodium. Also included are the trace minerals: iron, iodine, and fluorine. Trace minerals are minerals that are found only in small amounts in the body.

Calcium and phosphorous are two minerals that work together as a team. Both are more effective when the other is present. They are both needed for strong bones and teeth. They are important for clotting of the blood and for normal heart and muscle formation.

The richest sources of calcium are milk and milk products including yogurt and hard cheeses. Other good sources are fish and green leafy vegetables. Foods that are rich in calcium are also rich in phosphorous.

Sodium, chlorine, and potassium work together as a team in your body. They help keep the right amount of fluid around and inside of the cells in your body. They allow the cells to take up the nutrients from the blood. These minerals also help the nerves and muscles function as they should.



These minerals are found in many foods. Sodium and chlorine are found in table salt. Bananas, orange juice, green leafy vegetables, and milk are all good sources of potassium.



Iron is a trace mineral that is extremely important for the development of healthy red blood cells. Lack of iron can cause **anemia**. Symptoms of anemia are a tired feeling, lack of energy, and a loss of appetite.

Liver is an excellent source of iron. Other sources are meat, fish, nuts, eggs, dried beans and peas, and whole grain or enriched breads and cereals.



**Especially for Girls:** Eating enough foods that contain iron is especially important to females because they lose iron during their monthly menstrual cycle.



Iodine is used to help the thyroid gland produce a hormone that affects growth and weight. If your body does not receive enough iodine, the thyroid can grow larger because it is trying to produce this hormone. This condition is called a **goiter** which is a swelling in the front of the throat.

Iodized salt contains iodine. Most people use enough salt to meet their needs for this mineral. Salt water fish are also a good source of iodine.



Fluorine, in the form of fluoride, is needed for the development of strong bones and teeth. Fluorine is helpful in the prevention of tooth decay. It is added to many brands of toothpaste. Fluorine is often added to municipal drinking water. Small amounts are also found in meats, milk and eggs.



**Name the mineral or minerals important to the following.**

- 1.30 Bone growth \_\_\_\_\_
- 1.31 Functioning of red blood cells \_\_\_\_\_
- 1.32 Thyroid gland activity \_\_\_\_\_
- 1.33 Prevention of tooth decay \_\_\_\_\_

1.34 Prevention of anemia \_\_\_\_\_

1.35 Keeps the right amount of fluid around and inside the cells \_\_\_\_\_



**Fill in the blanks.**

1.36 List three good sources of calcium.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

1.37 Name one food source of iodine. \_\_\_\_\_

1.38 Define the term *trace minerals*. \_\_\_\_\_

\_\_\_\_\_



**Complete the following activity.**

1.39 Fill in the following table as completely as you can for a study guide. Beside each nutrient in the chart, explain why the nutrient is needed by your body and name food sources of the nutrient.

NUTRIENT	WHY NEEDED	SOURCES
Proteins		
Carbohydrates		
Fats		
Vitamin A		
B Vitamins		
Vitamin C		
Vitamin D		

NUTRIENT	WHY NEEDED	SOURCES
Vitamin E		
Vitamin K		
Calcium and Phosphorous		
Iron		
Iodine		
Fluorine		
Sodium, Chlorine and Potassium		
Water		



**Adult Check**

\_\_\_\_\_ **Initial**

\_\_\_\_\_ **Date**



## **MYPLATE**

For many years, Americans followed the United States Department of Agriculture (USDA) created Food Pyramid. In 2010 they created MyPlate.

The new food guide specifies food choices for the total diet because both nutrient adequacy and excesses are of concern. The specific nutrient levels targeted are the Recommended Dietary Allowances (RDAs) for protein, vitamins, minerals, and levels of food components such as oils, saturated fat, cholesterol, sodium, and fiber recommended by the Dietary Guidelines and by consensus reports of authoritative health organizations.



## DIETARY GUIDELINES FOR AMERICANS

- Eat a variety of foods.
- Balance the food you eat with physical activity—maintain or improve your weight.
- Choose a diet with plenty of grain products, vegetables, and fruit.
- Choose a diet that includes oils but is low in fat, saturated fat, and cholesterol.
- Choose a diet moderate in sugars.
- Choose a diet moderate in salt and sodium.
- Avoid alcoholic beverages.

MyPlate divides food into five basic groups. Oils are not a food group but they do provide some needed nutrients. Solid fats and sugars add calories to food but they have no nutrients. Since they do not provide nutrients they are called empty calories. MyPlate shows us how to choose healthy foods. It tells us how much of what foods we need. Learning which foods are in each group will help you choose foods that are good for you. Learning the number of servings you should have each day will help you get all the needed nutrients. In MyPlate, foods we should eat more often have a larger color and those we should eat less frequently are smaller. Everyone in the family can find more information about how to eat better and exercise more to stay healthy at the Web site, *MyPlate.gov*.

Vitamin A deficiency causes loss of vision in dim light (night vision). Vitamin D deficiency leads to a faulty deposit of calcium in bones and teeth, resulting in rickets. A child with rickets may have bowed legs and a prominent sternum (breastbone). Vitamin C deficiency is known as scurvy. It causes infected and bleeding gums and painful joints.

Vitamin B<sub>1</sub> deficiency, or beriberi, damages the nerves, heart, and circulation. Whole-grain flour and enriched flour that is processed in the United States contains Vitamin B<sub>1</sub>.

Vitamin B<sub>12</sub> deficiency causes blood disorders and affects the nervous system. It rarely results from an inappropriate diet but usually from a defect of absorption in the digestive tract.



**Answer the following questions.**

- 1.49 What percentage of daily nutrient requirements should breakfast provide? \_\_\_\_\_
- 1.50 Define *convenience foods*. \_\_\_\_\_  
\_\_\_\_\_
- 1.51 Fast food meals are sometimes low in \_\_\_\_\_ and \_\_\_\_\_ and often are extremely high in \_\_\_\_\_.
- 1.52 Persons with high blood pressure should avoid \_\_\_\_\_.
- 1.53 In diabetes mellitus, the body does not make normal use of \_\_\_\_\_, or blood sugar.
- 1.54 What nutrient might a vegan lack in his diet? \_\_\_\_\_
- 1.55 Define obesity. \_\_\_\_\_
- 1.56 Who is more likely to be diagnosed with anorexia nervosa? \_\_\_\_\_
- 1.57 Lack of iodine can cause \_\_\_\_\_, an enlargement of the \_\_\_\_\_.
- 1.58 A deficiency in the following can cause:
  - a. Vitamin A \_\_\_\_\_
  - b. Vitamin D \_\_\_\_\_
  - c. Vitamin C \_\_\_\_\_
  - d. Vitamin B<sub>1</sub> \_\_\_\_\_
  - e. Vitamin B<sub>12</sub> \_\_\_\_\_



Review the material in this section in preparation for the Self Test. The Self Test will check your mastery of this particular section. The items missed on this Self Test will indicate specific areas where restudy is needed for mastery.

## SELF TEST 1

**Match each word to its definition** (each answer, 2 points).

- |      |   |                          |
|------|---|--------------------------|
| 1.01 | _____ chemicals or building blocks used to make proteins            | a. amino acids           |
| 1.02 | _____ proteins that are low in one or more amino acids              | b. cholesterol           |
| 1.03 | _____ proteins with all the amino acids needed to make body tissues | c. complete proteins     |
| 1.04 | _____ starches  | d. fiber                 |
| 1.05 | _____ sugars  | e. complex carbohydrates |
| 1.06 | _____ nutrients best used to repair and build tissues               | f. incomplete proteins   |
| 1.07 | _____ a plant material that humans cannot digest                    | g. simple carbohydrates  |
| 1.08 | _____ a fat-like substance found in blood, tissues, and food        | h. proteins              |

**List the six nutrients** (each answer, 3 points).

- 1.09 \_\_\_\_\_
- 1.010 \_\_\_\_\_
- 1.011 \_\_\_\_\_
- 1.012 \_\_\_\_\_
- 1.013 \_\_\_\_\_
- 1.014 \_\_\_\_\_

**Match the vitamin to its function or source.** Answers may be used more than once (each answer, 2 points).

- |       |   |              |
|-------|---|--------------|
| 1.015 | _____ helps keep teeth and gums healthy | a. Vitamin A |
| 1.016 | _____ is found in meat and whole grains | b. Vitamin B |
| 1.017 | _____ important for vision              | c. Vitamin C |
| 1.018 | _____ helps clot the blood              | d. Vitamin D |
| 1.019 | _____ “sunshine” vitamin                | e. Vitamin K |
| 1.020 | _____ found in carrots                  |              |
| 1.021 | _____ helps promote proper digestion    |              |

**Match the mineral to its function** (each answer, 2 points).

- |       |                                 |             |
|-------|---------------------------------|-------------|
| 1.022 | _____ prevention of tooth decay | a. calcium  |
| 1.023 | _____ thyroid gland activity    | b. iron     |
| 1.024 | _____ bone growth               | c. iodine   |
| 1.025 | _____ prevention of anemia      | d. fluoride |

