

# LEVEL 3

4-H  
LEADER GUIDE



## NUTRITION FOR THE HEALTH OF IT

Dear Leader:

*Nutrition for the Health of It* is designed for Level 3 4-H members (ages 15 to 19). Information in this guide is based upon previous learning experiences in Levels 1 and 2 of the food and nutrition projects.

This guide focuses on current concerns in food and nutrition subject matter. It explores the nutrients needed throughout the life cycle; the RDA and special food needs; nutrition for the athlete; dietary food fads; gourmet and ethnic foods; the evolution of food in the space age; and food and nutrition careers.

The lessons are designed to be taught as numbered. This guide could be used for a total of 3 years. Lessons 1 through 5 should be used for the first year, Lessons 6 to 11 for the second year, and Lessons 12 to 17 for the third year. There is sufficient subject matter in Lesson 5 to be used for two lessons.

You will also notice that not all of the lessons involve preparation of foods by the 4-H members. Food preparation is important, but preparation in itself should not be the main focus of a food and nutrition project. Other activities in the lessons also are exciting and challenging.

These guidelines can help you in your group leadership role.

1. Read each lesson carefully at least 1 week prior to the meeting. 4-Hers will sometimes have an assignment for the next meeting.
2. Obtain the Extension publication listed under Equipment and Materials from your county Extension agent and review that material to broaden your knowledge of the lesson's subject matter.
3. Cover the subject matter printed in each lesson before beginning the activities.
4. Involve 4-H members in as many aspects of each meeting as possible.
5. Involve teen leaders in conducting project group meetings.

You have our very best wishes for a successful 4-H project.

Sincerely,

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# Nutrition for the Health of It

## Level III Leader Guide\*

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\*All references, criteria for measuring progress and recognition ideas are located at the end of each subject matter chapter.

# Lesson 1. Nutrients, The RDA and You

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## Objectives

4-H members will learn about the nutrients in food and their function; terms used in nutrition resources; the RDA nutrient standard and its use; and the importance of variety in foods.

## Before the Meeting

- Borrow a copy of B-1413, *Nutritive Value of Food*, D-1284, *Special Food Needs Dietary Guide—Revised Recommended Dietary Allowances*, *USDA Food Guide Pyramid*, and *Nutrient Analysis Form and Guidelines* from the county Extension agent.
- Ask that the handout “Menu Form” be duplicated.

## Equipment/Materials

- B-1413, *Nutritive Value of Foods*
- Copies of handout “Menu Form”
- D-1284, *Special Food Needs Dietary Guide—Revised Recommended Dietary Allowances*
- *USDA, Food Guide Pyramid*
- Paper and pencil
- *Nutrient Analysis Form and Guidelines*

## Time

35 to 40 minutes

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### Subject Matter

Research has shown that healthy people can obtain all their daily nutrient needs by eating a variety of foods. An adequate diet provides a balance of approximately 50 nutrients needed to build, maintain and repair the body tissues.

Why not check up on your food and the nutrients that you are eating daily? The quickest way to determine if you are eating the foods you need is to check your menu using the daily food guide.

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### Suggested Activities

Have 4-H members compare their food intake with the daily food guide in the *USDA Food Guide Pyramid* and complete a nutrient analysis.

Refer to *Nutritive Value of Foods* to complete the nutrient analysis assignment. Determine how long it takes to plan a menu using the menu form versus completing the nutrient analysis. Take time to write down all the food items you ate yesterday on the menu form. Use the food groupings to check the nutritive value of your diet for 1 day. When you complete the form, record the time it takes and analyze the menu using the nutrient analysis method. Then complete the nutrient analysis form obtained from your agent. Follow the step-by-step instruction guide for completing the nutrient analysis. Record the time it takes. Discuss the pros and cons of using a nutrient analysis of foods versus a food guide for rating your diet. Compare each method of planning menus for time and accuracy.

## Subject Matter

## Suggested Activities

Take a look at a few terms that will help you to understand the meaning of diet, food, nutrition, nutrients, calories and malnutrition:

Diet	food choices which contribute to the growth and maintenance of our bodies.
Food	any substance which, when taken into the body, can be used to supply energy or build tissue.
Nutrition	the science of how the body uses food.
Nutrient	a chemical substance in food that can be used by the body (e.g., carbohydrates, proteins, fats, minerals and vitamins).
Calories	a measure of heat or energy released from food.
Malnutrition	imperfect nutrition, or the state of the body when food and nutrients are either overabundant or lacking.

How do you know when you are eating the right foods in recommended amounts to maintain a healthy body? The best way is to know the kind and quantity of foods which provide the necessary nutrients needed daily. It is up to each individual to regularly select food which will provide these nutrients. Another key is to ensure that an adequate amount of food containing a variety of nutrients is eaten every day so food will be digested, absorbed and used by the body for growth, maintenance and repair. Many factors can keep your body from using nutrients to their best advantage, including drugs, illness, fever, genetics and/or stress.

The easiest way to ensure that you are eating the recommended nutrients is to follow The Food Guide Pyramid, the daily groupings or daily food guide. This food guide is based on the Recommended Dietary Allowances, commonly referred to as the RDA. The RDA was written by an expert committee in nutrition—the Food and Nutrition Board of the National Research Council of the National Academy of Sciences.

As you discuss these terms, write them on newsprint, chalkboard, poster or flash cards.

Nutrients are necessary in the recommended amounts. Discuss the RDAs with the group. Refer to Tables I, II and III in Revised Recommended Dietary Allowances found in the Special Food Needs Dietary Guide. Become familiar with and discuss the revisions, and the recommendations for various age groups for vitamins, trace elements and electrolytes.

## Subject Matter

Just how are the recommendations used in the RDA? The RDA serves as a guide to professional nutritionists in planning recommendations for such government programs as school lunch or food assistance programs. Food companies use it in developing new products. It is used to compare diets in different populations and to design human experiments.

The RDA can be used to determine if you are obtaining adequate amounts of essential nutrients. The allowances are supposed to provide for differences among most persons who live in the United States under usual environmental conditions. These recommendations are used by nutritionists to evaluate the nutritional quality of an individual's diet.

For the RDA to be useful to you, it must be translated into food groups. Diets should be based on a variety of common foods in order to provide all the nutrients needed by the body. Ensure that you obtain the recommended dietary allowances by eating the foods recommended in the Daily Food Guide.

A recent nutrition study indicated teens were the most poorly nourished group in Texas. The two nutrients most lacking in the diet were calcium and iron. The study also showed teens ate many foods which promote cavities in teeth. How can you help teenagers plan a menu which includes nutritious snacks to help overcome these deficiencies?

Which foods provide the best sources of calcium and iron? Which foods would you recommend for snacks to prevent cavities in teeth? Why?

### Criteria for Measuring Progress

Each participating 4-H member can:

- Name the basic food groupings and the major nutrients within each group.
- Name and use terms used in nutrition resources.
- Explain the nutrient standard (RDA) and how it is used.

## Suggested Activities

Discuss the uses of the RDA with the group.

Write various nutrient names for the recommended dietary allowances on small slips of paper and place them in a bowl or hat. Ask 4-H members to draw the name of a nutrient. Give them time to find the facts about their nutrient and report back to club members.

Refer to the Extension bulletin *The Food Guide Pyramid*.

Refer to Extension 4-H Food and Nutrition Project Leader Guides, Level I and II. Have each member make a balanced meal plan for a teen, based on moderation and variety.

Discuss the nutritional needs of teens and women during special situations such as pregnancy and lactation.

Name the nutritional issues affecting today's teens.

- breast versus bottle feeding
- "this is in"
- nutrition and the athlete
- other

## Subject Matter

## Suggested Activities

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### Recognition

- Smile.
- Have 4-H members debate the pros and cons of nutrient analysis versus use of the daily food guide.

### Menu Form

**Food (list items)** **Beginning time** \_\_\_\_\_

<b>Meals/snacks</b>	<b>Milk, yogurt and cheese</b>	<b>Breads, cereals, rice and pasta</b>	<b>Meat, poultry, fish, dry beans, eggs and nuts group</b>	<b>Fruits</b>	<b>Vegetables</b>	<b>Fats, oils and sweets</b>
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\_\_\_\_\_ **Servings** \_\_\_\_\_

Breakfast:  
 \*Morning snack:  
 Lunch:  
 \*Afternoon snack:  
 Dinner:  
 \*Evening snack:  
 Add it up to see how you rate!

<b>Food</b>	<b>Recommended servings</b>	<b>Total servings eaten</b>
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-Milk, yogurt and cheese	2 or more	
-Bread, cereal, rice and pasta	6 to 11	
-Meat, poultry, fish, dry beans, eggs and nuts	2 3-ounce	
-Fruits	2 to 4	
-Vegetables	3 to 5	
-vitamin A		
-vitamin C		
-Fats, oils and sweets	optional	
-Water	6 or more cups	

\*If you plan to include a snack, remember to add it in the nutrient analysis and menu forms.

Final time \_\_\_\_\_

# Lesson 2. Nutrient Needs During All Ages and Stages

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## Objectives

4-H members will learn that the same nutrients are required by all people throughout life. The amounts needed depend on the age and stage of one's life and the level of physical activity.

## Before the Meeting

- Obtain resources on maternal and infant nutrition from:
  - March of Dimes
  - local health department nutritionists
  - Women's, Infants' and Children's program nutritionist
  - local hospital dietitians
- Contact adults' or children's day care center to set up tour (optional).
- Ask agent to provide you with a copy of D-1284, *Special Food Needs Dietary Guide—Revised Recommended Dietary Allowances*.

## Equipment/Materials

- Resources on maternal and infant nutrition
- Food processor demonstration supplies  
(Optional for preparation of vegetables, fruits and meats: tray for food processor, manufacturer's guide, foods you select to demonstrate, napkins and paper plates to serve foods that are prepared.)
- Newsprint, marker
- D-1284, *Special Food Needs Dietary Guide—Revised Recommended Dietary Allowances*

## Time

35 to 40 minutes

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Subject Matter	Suggested Activities
<p>Who needs nutrients? The same nutrients are needed by all people throughout their lives, but individual nutrients are required in different amounts by different people. Various amounts of nutrients are needed by people at different ages and stages of life.</p> <p>The exact amount of each nutrient a person needs depends on one's age and stage of life and the level of physical activity.</p>	<p>Refer to <i>Recommended Dietary Allowances</i> for nutrition needs of different age groups.</p> <p>Have a representative from the March of Dimes, a local health department nutritionist or Women's, Infants' and Children's Program nutritionist visit the club and provide resources that discuss the influence of nutrition on the development of the fetus. Have the professional nutritionist discuss the pros and cons of breast feeding and bottle feeding.</p>

## Subject Matter

**Age** is important. During rapid growth and development (infants, young children, adolescents, pregnant and nursing [lactating] mothers), some nutrients are needed in greater amounts. As people grow older their lifestyles become more sedentary and their metabolism decreases. They usually have to eat less food and exercise more to prevent weight gain. It is especially important to pay attention to the quality of the diet by eating more nutrient-dense foods (foods high in nutrients but lower in calories, such as leafy deep green vegetables) and fewer foods high in calories but low in nutrients, such as fats and sweets. A young child or an elderly person may need foods that are easily chewed, such as chopped meats and soft vegetables. We need to become aware of some of the feeding problems associated with different ages of life.

**Gender** influences the amount of nutrients needed. For example, women during child bearing years require more iron than men because of loss of blood during the menstrual cycle.

**Size** also makes a difference. A larger framed person requires more food than a smaller framed person. There is a direct relationship between the body's need for calories and the body's size. More calories are required to perform muscular work and to maintain the functions such as breathing and blood circulation. The larger teenager would require more calories to maintain his/her normal weight than a smaller preteen.

**Exercise** or activity influences the number of calories needed. Walking or dancing requires more energy from food than does sitting. Daily caloric needs are determined by a person's daily physical activity and metabolic rate.

**Pregnancy** is a state which demands more nutrients, especially in the last trimester or 3 months. During this time the baby grows very quickly. Also, the pregnant woman requires more energy to maintain her own body weight plus that of the fetus. More protein, iron, folacin (a B vitamin) and calcium are needed because new tissue is being built. It is evident that good nutrition before and during pregnancy is essential. Evidence exists that alcohol

## Suggested Activities

With newsprint and markers, ask 4-H members to develop a suggested meal pattern for a boy toddler, a girl teenager, a pregnant woman and an elderly man. There is no exact meal pattern but remember to have your plan based on ages, stages, size, gender, state of health, pregnancy and physical activity. Have them consider nutrition, cost, color, texture and flavor of foods in planning the menu.

Or, you may want to schedule a tour to visit the food service at a day care center, kindergarten or nursing home following this activity.

Ask group members to explain how a food processor can be used to prepare foods for different ages and stages, and why the food processor is useful in feeding the elderly or an infant. Relate this to modifying a diet for someone with chewing problems. Give a method demonstration on the use and care of the food processor.

Have a resource person such as the dietitian or food service director at a local nursing home, hospital, school or day care center visit the club to discuss the food service for a particular age group. Ask questions about preparation time, food served, preparation techniques, and requirements of the health department (such as sanitation, portion control and time-temperature studies).

should not be consumed during pregnancy because of probable harm to the fetus.

Finally, during periods of injury such as bad burns, surgery or illness, more nutrients are needed to help rebuild tissues. More food will be required during these convalescent periods to hasten healing and maintain good nutritional status.

### **Criteria for Measuring Progress**

Each participating 4-H member can:

- Discuss the importance of moderation and variety in the diet.
- Discuss how nutrient needs vary for different ages and stages.

### **Recognition**

- Smile.
- Thank each member for participating in group discussions.
- Compliment members on their interest, neatness and conduct during the tour of food service at a day care center or nursing home.

# Lesson 3. What About Those Special Needs?

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## Objectives

4-H members will learn how to plan nutritious meals for family members who have special food needs; how to use nutrition information on food labels for special food needs; and methods of modifying a regular diet for special needs.

## Before the Meeting

- Collect pamphlets related to nutrition and health from various health related agencies (optional).
- Ask the county Extension agent to give you one copy of L-1502, *Dealing With the Diabetic Diet*, and D-1284, *Special Food Needs Dietary Guide*.
- Ask for enough copies for the group of these two USDA bulletins: *The Food Guide Pyramid* and *The Dietary Guidelines*.
- Collect a variety of food labels.

## Equipment/Materials

- Pamphlets related to nutrition and health
- L-1502, *Dealing With the Diabetic Diet*
- A variety of food labels
- Newsprint, felt tip pens
- D-1284, *Special Food Needs Dietary Guide*
- USDA, *The Food Guide Pyramid*
- USDA, *The Dietary Guidelines*

## Time

35 to 40 minutes

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Subject Matter	Suggested Activities
<p>Recent research suggests that certain diseases may be related to the diets of people susceptible to those diseases. Excess sodium in the diet may relate to the development of hypertension (high blood pressure). People diagnosed as being “at risk” with regard to certain forms of heart disease may be advised by their doctors to limit their intake of fats and cholesterol. Sugary foods promote tooth decay. Failure to consume enough of the dietary fiber found in fruits, vegetables and grains may be related to an increased possibility of developing cancer of the lower bowel. Ethyl alcohol (from intoxicating beverages) can lead to cirrhosis of the liver. More research is needed to establish direct relationships between diet and disease.</p>	<p>Set up an exhibit for a local health fair, a mall, a county fair or a 4-H club activity. Include information about how nutrition may be used in the treatment of alcoholism, heart disease, diabetes, hypoglycemia, hypertension or weight control.</p> <p>Ask 4-H members to write various health-related agencies (American Diabetes Association, etc.) for pamphlets. The addresses for these groups can be obtained from your county Extension agent.</p> <p>Take 4-H club members on a field trip to visit several restaurants, fast-food places and cafeterias. Investigate the nutritive value of the foods served. Some of these restaurants pro-</p>

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## Subject Matter

Menus for special food needs can be planned by using *The Food Guide Pyramid*. If you have a family member who needs to restrict fat, sugar, sodium, alcohol or calories, or needs to increase fiber foods, then those modifications need to be made in the form of special diets prescribed by a physician. If you or any member of your family are on a special diet, start reading the nutrition information on food labels to ensure that the foods you choose are allowed by the special diet.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Name the dietary guidelines.
- Name food groupings and servings required by different age groups.
- Plan nutritious meals for special food needs.
- Show how food labels are important for those with special food needs.

### Recognition

- Smile
- Thank each member for participating in group discussions.
- Give a small kitchen utensil to the member who can best describe how a food processor is useful in modifying foods for those who have difficulty in chewing.

## Suggested Activities

vide information to the public on the nutritive value of foods they serve. Ask 4-H members to find out which foods could be ordered in each eating place for the low calorie, low sodium, low sugar, low carbohydrate, high fiber and low fat diets. Discuss whether or not you could recommend certain fast-food places for all special diets. Why or why not?

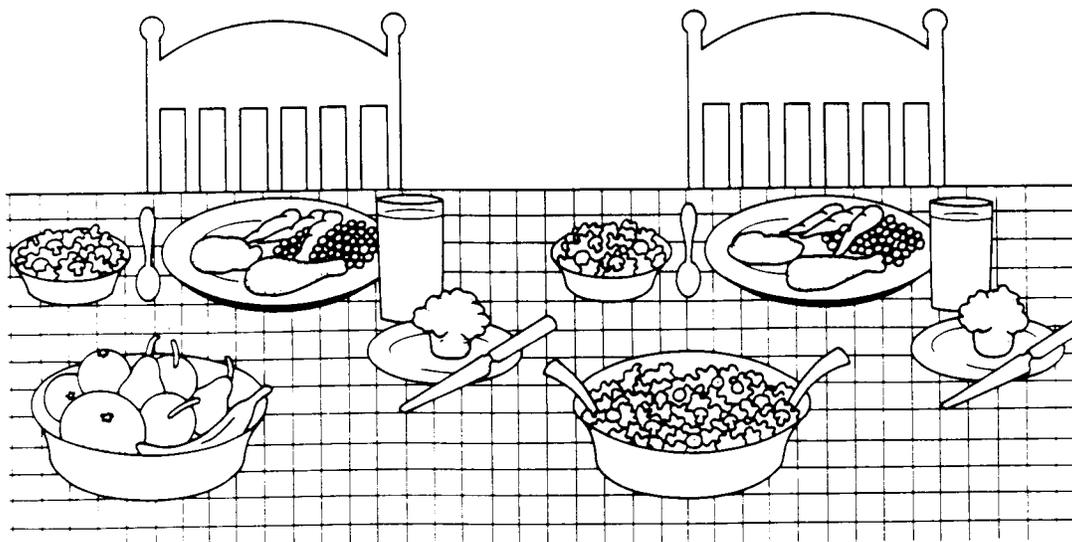
Refer to the USDA bulletin *The Food Guide Pyramid* and discuss the food groupings. These food groupings are based on the recommendations set forth in the USDA bulletin *The Dietary Guidelines*. Ask members to name the guidelines.

Write the information in Table 1 (Lesson 3) under "Special Needs" on newsprint. Brainstorm some helpful hints to assist in planning food needs for those on a special diet.

Have 4-H club members collect and bring to this meeting a variety of food labels from convenience foods, frozen foods, canned goods, grain products, milk products, etc. Determine which foods should be avoided and why people on special diets such as the low fat, low sodium and low calorie or diabetic diets should avoid them. Which foods would be high fiber sources? Refer to handout in Lesson 1. What precaution would you recommend to anyone on a special diet concerning the use of highly processed foods? Why? Did you use nutrition information on the label to help you make your decision? Have members plan a menu for a person who has diabetes. Write the menu on newsprint.

**Table 1. How to Modify a Regular Diet for Special Food Needs.**

<b>Special need</b>	<b>Suggestions for modifying the regular diet</b>
Decrease sugars or carbohydrates	Avoid sugar, syrups and sticky foods. Replace high sugar snack foods with nuts, fresh fruits, raw vegetables and milk. Read all nutrition information and ingredient listings on food labels so foods containing large amounts of sugars (sucrose, fructose, honey, etc.) can be avoided.
Decrease fat	Trim fat from meats prior to preparing and use cooking methods that reduce fat in meat. Use skim milk products. Eat more fruits, vegetables, breads and cereals, rice and pasta. Avoid sauces on frozen foods and convenience foods containing large amounts of fat.
Decrease sodium	Read food labels to determine which products contain large amounts of sodium. Avoid fermented vegetables such as pickles or heavily salted foods such as cured meats.
Decrease calories	Cut down on fried foods, concentrated sweets and foods containing concentrated fats or sugars. Reduce portion sizes.
Increase fiber foods	Use more whole grain breads and cereals and fresh fruits and vegetables. Do not take bran supplements or other medication without the advice of a physician.



# Lesson 4. The Athlete's Nutritional Needs

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## Objectives

4-H members will learn about the athlete's nutrient needs, the basic meal plans, the recommended amounts of nutrients, and pre-game meal recommendations.

## Before the Meeting

- Refer to USDA, *The Food Guide Pyramid* obtained from the county Extension agent.
- Ask a 4-H member to interview an athlete and report to the group at this meeting.
- Cut out magazine pictures of pre-game food suggestions.
- Ask the county Extension agent to provide you a copy of the Sports Nutrition Section of D-1284, *Special Food Dietary Guide*.

## Equipment/Materials

- USDA *The Food Guide Pyramid*
- Magazine pictures or food models of pre-game food suggestions
- D-1284, *Special Food Dietary Guide*, Sports Nutrition Section

## Time

35 to 40 minutes

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## Subject Matter

The nutrient needs of athletes are basically the same as those of non-athletes. The high school athlete should eat a balanced diet containing a variety of foods to obtain all the nutrients essential for good health and optimal physical performance. Amounts of calories, water, possibly sodium, potassium and calcium may need to be increased to maintain an athlete's body weight during intensive training and performance. However, excessive amounts of protein, vitamins or minerals may be harmful, as you will see in the discussion of each of these nutrients.

The calories needed by athletes to maintain a healthy weight vary according to their physical activity. Maintaining weight so that you are neither too fat nor too thin is a function of balancing the energy you consume with the calories you burn. The number of calories needed is dependent upon body size, gender, age, particular activity and training level.

No special or fad diet is recommended. The American Medical Association Committee on Medical Aspects of Sports recommends that an

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## Suggested Activities



USDA's *Food Guide Pyramid* can be used as a guide for planning the diet for an athlete.

Prior to this meeting, have a 4-H member volunteer to talk to a professional athlete or someone who is involved in a high school or college sport. Ask the athlete what he or she knows about nutrition as related to athletic performance. Find out what happens when too much fat is eaten; not enough calories; too little water; gas-forming foods. Have the 4-H'er report the athlete's knowledge to the 4-H club.

## Subject Matter

athlete's meal plan provide enough calories to satisfy the energy requirement of the athlete, with 15 percent of the calories from protein, less than 30 percent from fat, and 55 to 60 percent from carbohydrates. Never use dietary supplements such as salt tablets, high protein powders, etc., unless recommended by a physician.

The major dietary need for athletes is increased calories. Protein is relatively easy to obtain by eating foods such as milk, meat and bread daily. The more exercise done, the more calories are required. Usually an athlete's appetite will increase so that he or she eats enough to satisfy increased caloric needs. It is especially important to eat more of the basic food groupings (especially fruits, vegetables, bread, cereal, rice and pasta), and avoid eating too many foods high in fats. The protein requirement only increases slightly with increased muscle mass.

Keeping the body fully hydrated before, during and after physical activity is a requirement for general health and optimal performance. Athletes require more water during heavy exercise because sweating is the way the body rids itself of the extra heat. Also, electrolytes are lost. Water lost by sweat needs to be replaced so the body temperature will not go beyond normal limits. Severely high body temperature can cause heat stroke (a syndrome resulting from exposure to high temperatures). A good rule of thumb to use in estimating the amount of water required is that for every 1,000 calories of food eaten, a minimum of 1 quart of water should be drunk.

What and when food is eaten before competition can influence how you perform. Meals should be eaten at least 3 hours before an athletic event so sufficient time is allowed for proper digestion. Avoid foods high in fat, protein or cellulose, or foods such as cabbage, broccoli or dried beans if these foods cause gas problems. Instead, eat a meal rich in carbohydrates, such as pancakes with honey, a meat patty or mild sausage, a portion of tuna noodle casserole, a fruit cup or applesauce, and plenty of fluids.

## Suggested Activities

Does the athlete's knowledge coincide with the recommendations of AMA's Committee on Medical Aspects of Sports?

Ask 4-H members if they participate in school sports. Ask those who do to experiment with their diets. Try eating a high protein meal before an event, or try a meal higher in fruits, vegetables, bread, cereal, rice and pasta. Record how well they do in the competition and how they feel during the event. Ask them to make comparisons about which meal is best for them.

Ask a coach if your 4-H club members could meet and discuss nutrition with athletes. Ask them to name some of the supplements or vitamins they have taken to increase their athletic ability. Ask the athletes to describe their usual pre-game meals.

Plan a menu for an athlete based on what the athlete or coach told you about nutrition in relation to competition. Then plan one using the AMA's recommendations.

Research dietary supplements used by athletes and their effects on performance. Define ergogenic aid. List some commonly used ergogenic aids. (Refer to *Special Food Needs Dietary Guide*, D-1284.)

### Criteria for Measuring Progress

Each participating 4-H member can:

- Discuss the nutrient needs of athletes and how they differ from non-athletes.
- Plan and prepare basic pre-game meals according to basic food groupings.

### Recognition

- Let 4-H members invite their favorite athlete or coach and be responsible for presenting them to the group.
- Ask 4-H members to volunteer to demonstrate preparation of a pre-game meal.
- Let 4-H members plan a big fun run for all the 4-H members and/or families.
- If any member is an athlete, ask him/her to make a presentation to your club. The award could be a blue ribbon for a winning contribution to the 4-H club.

# Lesson 5. Nutrition Helps Hit Special Food Needs Head On

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## Objectives

4-H members will learn why caloric needs, water and sodium are increased for some athletes; what the practice of carbohydrate loading means; and the need for moderation and variety in the athlete's diet.

## Before the Meeting

- Get a copy of B-1400, *Sodium in Foods*.
- Obtain a computer and teen computer programs related to this topic (optional).
- Collect pictures of foods for pre-game meals.
- Ask 4-H member(s) to visit health food stores prior to meeting (see activity section).
- Collect containers/labels of processed foods containing sodium.
- Invite a coach and/or an athlete to visit the 4-H club.

## Equipment/Materials

- Paper and pencils for keeping a food record
- USDA, *The Food Guide Pyramid*
- A computer and teen computer programs related to this topic (optional)
- Food models or pictures of foods for pre-game meals
- Newsprint, felt tip pens
- Containers of processed foods containing sodium
- B-1400, *Sodium in Foods*
- Container, salt, teaspoon and saucer

## Time

35 to 40 minutes

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## Subject Matter

The reasons for some athletes to increase their intake of calories, water and sodium will be discussed in this lesson. "Carbohydrate loading" and how it can be used to improve athletic performance in certain endurance sports also will be discussed.

Research has identified the biochemical reactions that occur when food produces energy for exercise. This knowledge has enabled nutritionists to support or refute special dietary practices followed by athletes in the hope of improving their performance.

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## Suggested Activities

Ask an athlete from one of your school's teams (football, basketball, volleyball, etc.) to visit the 4-H club after recording everything he or she ate for 24 hours. Analyze the record according to the USDA *Food Guide Pyramid* or do a nutrient analysis using a computer program. (Discuss the possibility of using a computer program with the county Extension agent.) After you do the analysis, discuss the athlete's diet and compare it to that of a non-athlete of the same age and sex.

## Subject Matter

## Suggested Activities

Athletes and non-athletes have similar nutritional needs; however, because many people are confused and misinformed about nutrition for the athlete, each nutrient will be discussed.

**Protein, Fat and Carbohydrate.** Boys ages 11 to 14 require 45 grams of protein per day, whereas girls this age require 46 grams per day. Athletes need more protein during vigorous training because additional muscle may be produced; however, by eating a diet planned according to the basic food groupings, the athlete's protein intake will be sufficient to meet these needs. Eating more protein than provided by the average diet will not increase muscle size and strength. In fact, once protein fulfills its primary role of body building, the excess is either used for energy, converted to fat and stored, or is passed out of the body. Excess intake of protein adds stress to the liver and kidneys. Further, high protein intakes keep the body from holding fluid because more fluid is needed to rid the body of the wastes of protein metabolism.

Pre-game meals for football players often include a large portion of meat. This can result in excessive intake of protein and fat. If meat is eaten, a small lean hamburger patty would be better than a large cut of meat such as steak or roast. The digestion of the ground meat is quicker than the digestion of bite size pieces of beef. Usually fat leaves the stomach in about 5 hours. Protein foods leave the stomach in about 3 hours. Carbohydrate foods (such as foods from the bread, cereal, rice and pasta group) make the quickest exit. They leave the stomach in about 2 hours. More complex carbohydrates or cellulose take longer to digest. That is why a light meal eaten 3 hours before a competition allows the stomach and upper bowel to be empty or nearly empty for competition. The best diet plan includes higher amounts of carbohydrate (preferably provided by grain products and fruits) rather than large amounts of protein, fat and cellulose.

**Calories.** Physical activity requires calories. The number of calories needed daily depends on the level of activity, height, weight, sex and age. Athletes in training may require as many as 3,000 calories more per day than non-athletes. For example, during training for sports

Have a variety of food models or pictures of food items from various magazines. Plan a pre-game meal and write it on newsprint. Discuss ways to improve the volunteer's meal. Prepare and serve an appropriate pre-game meal.

## Subject Matter

## Suggested Activities

such as swimming, track and football, caloric needs, depending on body size and weight, may be as high as 4,000 to 5,000 calories a day. An adjustment in food intake is necessary to maintain appropriate weight. In other words, the more you exercise, the more calories you need to maintain your normal weight.

**Vitamins.** Daily requirements for vitamins do not depend upon physical activity. Excessive intakes of vitamins do not help and could harm the body. Some members of the B-vitamin complex promote chemical reactions that produce energy when carbohydrate, protein and fat are burned. Some coaches believe a high intake of B-vitamins will give an athlete extra energy. This is not supported by research. Since athletes usually eat more, they get more vitamins, unless of course all the extra food comes from the Fats-Sweets-Alcohol group. The best way to obtain required vitamins and minerals is to consume a nutritious diet. Taking vitamin supplements without a doctor's prescription is not recommended.

**Minerals.** Minerals help to control the body's chemical balance. A balanced diet provides adequate amounts of minerals. Two important minerals are potassium and sodium.

Potassium is needed for muscle function and also helps regulate the heart. When it is deficient the heart may not perform well enough to dissipate body heat, which could cause heat stroke. The symptoms of heat stroke include moist, cold skin; poor circulation; a dry mouth; elevated temperature; restlessness; and anxiety. Very little potassium is lost in perspiration. One should not worry about losing too much potassium except under extreme conditions such as very heavy exercise in extremely hot weather. Therefore, potassium supplements are not recommended.

Athletes should not ingest large amounts of potassium in a short period of time. Instead eating good natural sources of potassium such as raisins, avocados, prunes, dried apricots, bananas, orange juice and tomato juice is recommended.

The mineral sodium is found primarily in the fluid outside of the cells. Sodium helps the body to hold water—that is, to remain hydrated. Sodium is lost through sweating, especially when exercising in hot, humid weather.

Ask for volunteers to visit a health food store, a store which sells vitamins or mineral supplements and the health food section of the grocery store. Determine what supplements are being recommended for the athlete. Note any special athletic diet books that are recommended. What claims are being made to entice the athlete? Have 4-H members share their findings with the 4-H club at this meeting. Discuss facts about the nutritional needs of the athlete as they relate to certain fads often practiced by athletes. For example, should an athlete eat a heavy pre-game meal?

On newsprint, write the symptoms of heat stroke. Ask participants if they have ever had any of these symptoms after a strenuous physical workout.

Show a variety of processed foods (baking powder, biscuit mix, canned goods, etc.) Ask 4-H members to take one sample and explain the sodium source and its use (flavor additive, etc.). Refer to *Sodium in Foods*, Extension bulletin B-1400, as a reference for food sources.

Illustrate the amount of sodium lost daily. In one bowl place 1 teaspoon of salt (2 grams). In another place 3 teaspoons of salt (6 grams). In a third dish place 4 teaspoons (8 grams). Ask

## Subject Matter

Sodium loss may be as high as 8 grams daily, with a loss of 4 grams being the most common. Well-trained athletes seem to lose less sodium in their sweat; however, little data exists as to the exact amount. The estimated minimum requirement of sodium per day is 500 milligrams. The average diet contains from 2.3 to 6.9 grams of sodium a day, mostly provided through salt (sodium chloride), which is 39 percent sodium. One teaspoon of salt contains 2 grams of sodium. An athlete eating an average diet gets adequate sodium except when sweating is excessive. When sweating is excessive, sodium intake can be increased by adding an extra sprinkle of salt to food; by eating items such as saltines, nuts, crackers or cheese after practice; by drinking a homemade solution of 1 teaspoon salt to 6 quarts of water; or by drinking dilute solutions of the simple sugar, glucose, sodium chloride and artificial sweeteners. "Sport" drinks may be higher in cost, but can help if the other methods of adding salt are not preferred. Follow this general rule: When water loss exceeds 5 to 10 pounds in one contest or practice, then replace sodium by the recommended methods of obtaining salt. Basketball and wrestling of long duration, football practice for long periods in unusually hot weather, and marathon running on hot, humid days may cause such water loss. Replacement of fluid should follow the recommended procedure of weighing the athlete before and after games to determine how much fluid was lost. The athlete should then drink 1 pint of fluid for each pound of weight lost.

Athletes should never take salt tablets to replace sodium because these have a very high concentration of salt. Generous use of salt at mealtime usually will be enough. Excessive salt intake impairs the athlete's efficiency during training because it results in water retention and causes stomach upsets and excessive excretion of sodium in the urine. This could lead to more loss of potassium by the kidney.

All electrolytes, such as sodium and potassium, can be replenished with foods such as low-fat dairy products, spinach, bananas and grapefruit.

## Suggested Activities

members how athletes can prevent excessive sodium loss in the diet.

Ask 4-H members to name sports drinks they have tried in the past. What is their assessment?

Another practice that cannot be recommended is the use of diuretics for weight loss.

Wrestlers or gymnasts often take diuretics to qualify for a specific weight class. This is not an acceptable procedure. Diuretics can cause dehydration.

**Water.** Athletes lose the most water through the skin because the body's means of letting heat out is through the evaporation of sweat. It is important to consume water to replace the water lost in sweat. If water loss is not replaced, an uncontrolled increase in body temperature far above normal (often higher than 108 degrees F) will result. This condition, known as heat stroke, can cause brain and kidney damage, heart failure and even death. Heat stroke can be prevented by canceling practice on unusually hot and humid days (temperatures of 84 degrees F or higher, or high temperatures with a humidity greater than 90 percent), or any time temperature and humidity approach each other above 75 degrees F. When practice or competition cannot be rescheduled to a cooler, less humid time, then athletes should drink water before, during and after the period of physical exertion. Drink small amounts frequently, about 2 ounces at a time. Athletes must realize that during training or competition, even if they have quenched their thirst by drinking water, they may not have satisfied their body's need for fluid replacement.

### **The Practice of Carbohydrate Loading.**

Carbohydrates are the primary fuel for muscles during exercise. Carbohydrates are stored in the muscles. So muscle glycogen replaces blood glucose as the energy source during exercise. When glycogen stores are low, then fat serves as the major fuel source. "Carbohydrate loading" (a short period of fasting followed by a high level of carbohydrate consumption) is a controversial practice which seems to be of benefit only to athletes involved in endurance events such as marathon running or distance swimming. Carbohydrate loading is of no benefit to athletes involved in short-term events such as wrestling. The body's normal supply of glycogen (the stored form of carbohydrate found in the liver) is more than adequate for most events. During endurance exercise, however, an athlete becomes fatigued

## Subject Matter

## Suggested Activities

as the body's glycogen is depleted. Changing the diet can alter the body's stores of muscle glycogen and may improve performance. Eating plenty of foods with complex carbohydrates as part of your regular diet is the best strategy. It is possible to increase glycogen stores in the muscle and delay the onset of fatigue during exercise by changing the foods eaten. Carbohydrate loading follows this procedure:

- Gradually reduce training to rest muscles 2 to 3 days before the event (Step 1).
- Slowly increase carbohydrate intake to 525 to 650 grams each day during this period, while keeping total calories constant (Step 2).
- Select cereals, grains, vegetables and fruits instead of concentrated sweets such as honey or syrup (Step 3).
- Drink large amounts of fluids (water or fruit juice) but avoid alcohol or drinks containing caffeine (Step 4).

Carbohydrate loading may improve performance in endurance activities, but it does have definite side-effects. During the time when the athlete is eating the high carbohydrate diet and restricting activity, lack of practice may affect the athlete's concept of how he or she will do in the competition. Also, stiff or heavy muscles can result from the storage of high amounts of glycogen, since water is always stored with glycogen. Other possible side-effects include muscle and kidney damage, heart problems in athletes 40 years and older, and fluid and electrolyte imbalances.

The best method of ensuring that the nutritional needs of the athlete are met is to select a diet based on moderation and variety. The athlete's needs differ from those of a non-athlete only with respect to calories, water and sometimes sodium. Vitamin, mineral or protein supplementation is not recommended (unless prescribed by a physician) because excessive amounts are inefficient, potentially harmful and expensive. Never follow special or unproven practices unless prescribed by your physician because of the possible risks involved.

On newsprint or poster board, draw stair steps to illustrate carbohydrate loading. Place step 1 on the bottom and so forth.

Why is this practice followed? Is this practice recommended for all athletes?

Ask several coaches at your school to visit the 4-H club and discuss the importance of nutrition and athletic performance. You might ask them to discuss carbohydrate loading, salt tablets, pre-game meals and nutrient supplements. What do you do if a coach in your area recommends nutrition practices contrary to current research-based knowledge?

Let 4-H members plan a big fun run for all 4-H members and/or families.

Serve sports drinks to athletes along with other sources of electrolytes (such as salted nuts, popcorn or crackers).

Play favorite sports-related music (e.g., music from "Rocky," "Chariots of Fire," the Olympics, etc.).

### Criteria for Measuring Progress

Each participating 4-H member can:

- Show that some athletes may need to increase their intake of calories, water and sodium during competition.
- Know what the practice of carbohydrate loading requires and who should not practice it.
- Prepare and serve a nutritious pre-game meal based on moderation and variety.

### Recognition

- Thank members for assistance with programs and for their input in discussions.
- Smile and let 4-H members know that you approve of their efforts.

# Lesson 6. Food Fads

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## Objectives

4-H members will learn that food fads can be dangerous, that they are expensive, and that they are not supported by scientific facts. They will become aware of various terms used to describe food fads.

## Before the Meeting

- Call the Food and Drug Administration, (214) 655-5313, Ext. 5, to inquire about information available on food additives.
- Collect ads for diet fads from newspapers and magazines.

## Equipment/Materials

- Pencils and paper for survey questions
- Newsprint and felt tip pens

## Time

25 to 35 minutes

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Subject Matter	Suggested Activities
<p>Billions of dollars are spent annually on food fads, fad diets and dietary supplements. The people buying these fads are fooled either because they will not accept the basic truths and scientific facts about food and nutrition or because they do not know the facts.</p>	<p>Have the group define food fads.</p>
<p>Many of the fad diets are harmful because they are not balanced in nutrients. Fad diets may lead to poor health and even death.</p>	<p>List the fad diets individual members are aware of or have tried.</p>
<p>Exactly what do we mean when we talk about food fads and fallacies?</p>	<p>Survey 4-H club members about food fads. Ask them to think about the meaning of mal-nutrition discussed in Lesson 1. Ask if they agree or disagree with this statement about nutrition: "It does not hurt me if I get too much protein, vitamins, minerals or other nutrients. It only hurts me if I do not get enough." Have them write their own statements about the dangers of too many nutrients.</p>
<p><b>Food fad</b> — Any dietary concept that remains unproven scientifically. It is usually a passing craze or fashion accepted with enthusiasm.</p>	
<p><b>Food fallacy</b> — A false or mistaken opinion about food and nutrition.</p>	
<p><b>Food quack</b> — One who has little knowledge in food and nutrition, but pretends to be an expert.</p>	
<p><b>Natural foods</b> — Products processed without preservatives, emulsifiers or artificial ingredients.</p>	

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## Subject Matter

**Organic foods** — Essentially the same as natural, but organic also implies no pesticides and chemical fertilizers have been used in their production.

**Health foods** — Includes organic and natural foods, as well as dietetic, vegetarian and other products, some of which may contain artificial chemicals.

**Strict or true vegetarian** — Strict vegetarians eat no meat, chicken, fish or any animal products. They rely exclusively on vegetable protein. Food selection must be done carefully to obtain high quality protein and other essential nutrients. Otherwise, if food selections are not carefully made to combine proteins which complement one another, such as pinto beans served with corn tortillas, then the strict vegetarian may develop deficiencies. This is especially important during periods of rapid growth and development such as childhood, adolescence and pregnancy.

**Lacto-ovo-vegetarian** — Consumes milk, eggs and cheese, but not meat, fish or chicken.

**Additive** — Any substance added to food to enhance quality, increase the shelf life and retard spoilage in producing, processing, treating, packaging, transporting or storing food, including any source of radiation intended for such uses. Food additives have been used more in recent years partly because of the increased production of prepared, processed and convenience foods. Before any substance can be added to food, it has to be tested for safety by the Federal Food and Drug Administration. Without additives, it would be extremely difficult to provide enough food for the present population.

“Health”, “organic” and “natural” are just a few of the words in ads promoting foods. Remember that the advantages claimed for these foods over conventional foods are not supported by facts. And, they usually cost more money.

## Suggested Activities

Learn more about the role of additives in food processing. Write to the Food and Drug Administration, Rockville, Maryland 20851. Or call the regional FDA office located in Dallas (the number is listed at the beginning of this lesson). Ask about the role of additives such as sodium in food processing. Read the information on food labels to find out more about various food additives.

Attach newsprint to the wall or use a chalkboard. Have the group plan a menu for a strict vegetarian and lacto-ovo vegetarian diet using the form on the next page to assist you in determining if all food groups are present.

How would a strict vegetarian diet rate compared to recommended servings?

How would the lacto-ovo-vegetarian diet rate compared to the recommended servings? Which is nutritionally balanced? Why or why not?

Have members collect ads from popular magazines or newspapers promoting health, organic or natural foods.

## Subject Matter

## Suggested Activities

### Criteria for Measuring Progress

Each participating 4-H member can:

- Define terms used to describe food fads.
- Recognize false advertisements or claims about supplements.
- Know what a vegetarian diet is and some of the drawbacks of following this diet.

### Recognition

- Give a nutritious snack to the group after they finish writing their statements about nutrient supplements.
- Thank 4-H members for participation in the discussion of vegetarianism.
- Smile.

Vegetarian Menu						
Food Groupings	B		L		S*	
	Strict	Lacto-ovo	Strict	Lacto-ovo	Strict	Lacto-ovo
Meat, poultry, fish, dried beans and eggs						
Milk, yogurt and cheese						
Vegetables						
Fruits						
Bread, cereal, rice and pasta						
Fats, oil and sweets						
*B - Breakfast L - Lunch S - Supper						

# Lesson 7. Quick Weight Loss Quackery

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## Objectives

4-H members will learn to identify why food fads and diets are dangerous, and how to lose weight with lifestyle changes such as a sensible diet combined with exercise.

## Before the Meeting

- Invite a local nutritionist or dietitian to serve as a resource person.
- Write addresses listed under Activities on slips of paper and put them in a bowl or sack for members to draw.
- Ask members to bring clippings about food fads, supplements or weight control.

## Equipment/Materials

- Addresses for members to draw from a bowl or sack
- Newsprint and felt tip pens
- Ads and clippings about food fads, supplements or weight control

## Time

25 to 35 minutes

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Subject Matter	Suggested Activities
<p>One of the major nutritional problems of adolescents is obesity, because of the high fat content of the American diet. Obesity affects 10 to 35 percent of adolescents. Research shows that overweight children have a 75 percent chance of becoming obese adults and overweight adolescents have a 95 percent chance of becoming obese adults. The Second National Health and Nutrition Survey (1976-1980) indicated that 34 million Americans (25.7 percent) are overweight. Obesity is associated with high blood pressure, heart disease, diabetes, gallbladder disease, colon cancer, etc.</p> <p>Methods used to lose weight may not be based on research. For example, low carbohydrate and high protein diets, herbal preparations, jaw wiring, ear stapling and hypnosis are just a few of the extreme methods some people will use to lose weight. A national pastime is to find the latest quick, easy reducing diet. Fad diets promise a rapid loss of weight with little effort by the dieter. Some of the fad diets even promise an instantaneous weight loss that can be very dangerous. The American Medical Association has identified why food fads and diets are dangerous:</p>	<p>Have a dietitian or nutritionist in the community visit the 4-H club and present information about the latest nutrition fads related to weight control. Ask what are the possible health problems related to these diet fads. Ask the county Extension agent (family and consumer sciences) to discuss fad diets and weight control with you.</p> <p>Go through magazines and locate ads for reducing diets. Have members show the clippings they have brought. Discuss the pros and cons of each diet. Do they include the basic food groups? (Save these clippings for an activity in Lesson 8.)</p> <p>List the possible health problems on newsprint.</p> <p>Put the following addresses in a bowl or sack. Ask each member to draw one address and write a letter to this organization asking for information on food fads and weight control. At the next meeting, help determine if these are reliable sources for this type of information? Why or why not?</p>

## Subject Matter

## Suggested Activities

- Essential nutrients are missing and malnutrition is common. Many of the diets contain only one food. No one food provides all the nutrients needed. Variety and moderation in diets are recommended.
- Proper medical attention may be delayed while the food quack treats the condition.
- Faddish foods are usually more expensive.

If you are planning to change your eating habits, ask yourself the following questions:

Can I follow this food plan for more than 1 week?

Does the weight maintenance diet contain the basic food groups in the recommended amounts?

Does it promote rapid weight loss of more than 1 to 2 pounds a week?

Is it low in calories? How low?

Does it cost more than I can afford?

Will this plan help me form better food habits, make lifestyle changes and eat more sensibly?

The best method of losing or maintaining weight is by eating a sensible balanced diet with lower calorie food choices, exercising and changing bad eating habits.

Weight loss is not easy. It takes time and effort to lose unwanted pounds.

### Criteria for Measuring Progress

4-H members can:

- Maintain their weight through a sensible diet plan, exercise and improved eating habits.
- Determine fact from fiction in recognizing fad diets and their claims.
- Assess their own dietary needs prior to beginning any weight loss plan.

Allergy Foundation of America  
801 Second Avenue  
New York, New York 10017

American Dental Association  
211 East Chicago Avenue  
Chicago, Illinois 60611

American Family & Consumer Sciences Assoc.  
2010 Massachusetts Ave. N.W.  
Washington, D.C. 20036-1028

American Dietetic Association  
Publication Department  
216 West Jackson Boulevard  
Chicago, IL 60606

American Medical Association  
535 North Dearborn Street  
Chicago, IL 60610

Arthritis Foundation  
1314 Spring St. N.W.  
Atlanta, GA 30309

Nutrition Foundation, Inc.  
Office of Education and Public Affairs  
888 17th Street, N.W.  
Washington, D.C. 20006

Society for Nutrition Education  
2001 Killebrew Dr., Suite 340  
Minneapolis, MN 55425-1882

United States Food and Drug Administration  
Rockville, Maryland 20851

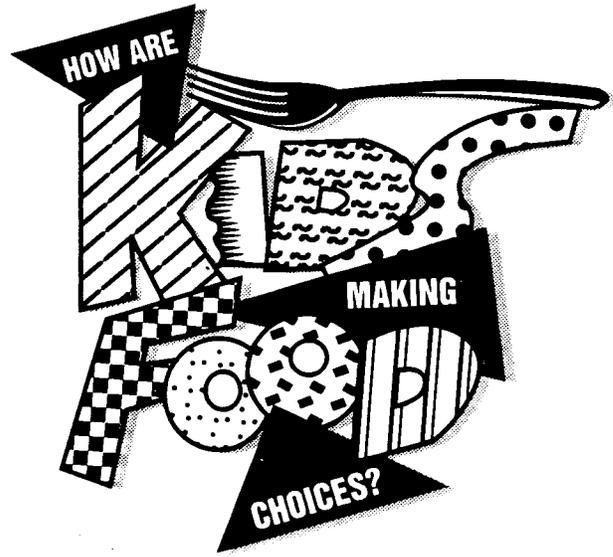
Office of U.S. Department of Information  
U.S. Department of Agriculture  
Room 402A-Administration G  
Washington, D.C. 20250

## Subject Matter

## Suggested Activities

### Recognition

- Thank 4-H members for bringing claims for food fads.
- Give a blue ribbon for the best response about nutrient supplements.
- Smile.



# Lesson 8. Nutrient Supplements

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## Objectives

4-H members will learn that the best type of insurance for good health is a nutritious diet based on variety and moderation; that nutrient supplements are not recommended unless prescribed by a physician; that nutrient supplements can be expensive and harmful; and where to find reliable nutrition information.

## Before the Meeting

- Collect samples of nutrient supplements (herbal preparations, chromium piccolinate, antioxidant vitamins, other vitamin/mineral supplements).
- Arrange a tour to a health food store.
- Ask the county Extension agent to provide you a copy the Extension publication *Lifestyle Choices for Healthy Weight*, and the USDA publication *Dietary Guidelines for Americans*.

## Equipment/Materials

- Samples of nutrient supplements
- Pencils and paper for short story
- Newsprint and felt tip pens
- *Lifestyle Choices for Healthy Weight*
- *Dietary Guidelines for Americans*
- Clothes hangers and string for making mobiles

## Time

30 minutes; if tour is taken allow 1 1/2 hours

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Subject Matter	Suggested Activities
<p>Misconceptions, confusion and lack of motivation were found to be barriers to dietary change in the USDA Diet and Health Knowledge Survey (1989). The knowledge survey asked household meal planners about their attitudes toward the Dietary Guidelines, their perceptions of how their diets followed the guidelines and their knowledge of how to follow the guidelines. The study found that Americans don't understand and, to some degree, don't care what they are eating. They want to be healthy but they don't want to make necessary changes. However, more than 35 million Americans are taking unprescribed vitamins because they have misconceptions about the role of vitamins. Many are taking vitamins "just to be sure" or as a type of insurance for good health. Vitamins are essential for good health; however, excessive amounts are</p>	<p>Show bottles of vitamins, minerals and other nutrition supplements.</p> <p>Compare ingredients listed on the labels and the cost of each supplement.</p> <p>Discuss how a person could get the same level of vitamins and minerals through food.</p> <p>Show the clippings of ads for nutrition supplements the 4-H'ers brought for Lesson 7. Discuss the claims and statements made by the manufacturers. As a group, make a mobile of the clippings for display.</p>

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## Subject Matter

## Suggested Activities

not recommended and can even cause harm to the body.

Most people do not require vitamin supplements except during certain special circumstances. A physician may prescribe vitamin supplements for older adults who may have very limited diets, as well as for expectant or nursing mothers. Some kinds of illness decrease food intake and may cause a patient to require vitamin supplements.

Large doses (mega doses) of vitamins and/or minerals reach beyond nutrition therapy. "Megavitamin" therapy refers to treating the person with doses greater than the requirements for those vitamins as set forth by the Recommended Dietary Allowances of the National Food and Nutrition Board. This really is considered drug therapy and certainly is not recommended except under the supervision of a physician. Taking large doses of the fat-soluble vitamins (A, D, E and K) may be poisonous or toxic. Excessive doses of the water soluble vitamins (B and C) also may cause problems. The problems differ because water-soluble vitamins are not stored in the body as are the fat-soluble vitamins. Excessive intakes of these vitamins can damage the kidney, causing it to work more to get rid of the vitamins. This could be potentially harmful for the person who has diabetes.

Vitamin supplements are also expensive, especially if they are not needed. If the diet is nutritious, there is no need to take supplements except during those rare instances when the body is not getting enough food or there is an increased nutritional need (e.g., growth, pregnancy).

So why take vitamins or any other drugs or supplements without your physician's advice? Vitamins and minerals are never a substitute for food. The best way to obtain all the minerals and vitamins necessary for good health is by eating enough of a variety of foods selected from the basic food groupings. Eating habits based on moderation and variety can help you maintain good health and can even improve health if ideal body weight is achieved.

Have your 4-H club members write short reports in response to this situation: One of your friends has just returned from a store where he or she bought several vitamin and mineral supplements. One of the supplements is vitamin A. Each capsule contains 2,000 R.E. of vitamin A, which is more than twice the Recommended Dietary Allowance. Your friend is planning to take several capsules each day because "more is better!" Your friend would like you to take some, too. What would you do? Explain why you decided to take or not take the supplements.

Tour a health food store and compare the cost of some of the health foods and supplements sold there with similar items sold in a grocery store. Visit some of the centers which specifically promote their products for weight control (e.g., Diet Center, Weight Watchers, etc.) Compare the cost, labor and preparation time for the various products with the publication, *Lifestyle Choices for Healthy Weight*. List some books about nutrients found in a health food store.

Have 4-H members try an experiment with a family member who is not pregnant, ill or on a special diet. Have the family member take a multi-vitamin tablet for a week, then give them a sugar pill (a placebo containing no vitamins) for a week without telling them which is which. Have them tell you how they felt. Did they feel better or different while taking either of the pills?

## Subject Matter

## Suggested Activities

Never be fooled by diet or food fads, vitamin or mineral supplements, or food quacks. Rely on recommended references given to you by your county Extension agent (family and consumer sciences), dietitians, nutritionists, home economics teachers and other health educators to help you determine fact from fiction.

Write to the Food and Drug Administration for information about legislation regulating the sale of dietary supplements: FDA, Rockville, Md. 20851.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Make a wise decision concerning vitamin or nutrient supplement use.
- Find reliable food and nutrition resources.
- Help others determine fact from fiction in relation to food fads and nutrient supplements.

### Recognition

- Smile.
- Let 4-H members read their reports to the group.

# Lesson 9. Traditions and Food

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## Objectives

4-H members will learn that food selection is based on nutritional, emotional or social needs, and that certain foods represent certain cultures.

## Before the Meeting

- Arrange a tour to ethnic restaurants in your area, or ask the owner of an ethnic restaurant to visit the club.
- Ask each member to bring a treat from a foreign country for an international tasting bee for club members.
- Collect a variety of cookbooks (Texas, foreign, etc.).

## Equipment/Materials

- Several gourmet magazines such as *Bon Appetite* or *Gourmet*
- Cookbooks (Texas, foreign, etc.)

## Time

30 to 35 minutes

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### Subject Matter

Welcome to a gourmet tour of Texas cultures. Did you know that more than 26 ethnic groups have influenced the Texas cuisine? Belonging to a certain ethnic group in a certain area of the state certainly influences personal food selection. Each ethnic group brings native food traditions and favorite recipes to be used in Texas. It is no wonder that your own family food preferences may even be quite different from your next-door neighbor's. This is especially true if your neighbors are from another country. Because of the mixed heritage of the state, a wide range of food exists in Texas.

Teens select different foods for many different reasons. They select them to meet nutritional, emotional and social needs, as well as because they represent a certain culture or ethnic group. Many teens enjoy preparing foods that are imaginative, creative and have a delicate flavor which would be acceptable to a gourmet. The French word "gourmet" is defined as anyone who enjoys foods that are prepared with taste and imagination, or a person who can make a delectable dish out of everyday foods. Whether people are introduced to new foods by the Texas ethnic cul-

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### Suggested Activities

To learn more about foods of different cultures, visit restaurants of different nationalities in your area. Order something you have not eaten before, such as the specialty of the house. If you cannot understand a foreign menu, ask the waiter to assist you. Try to figure out what spices were used, how the food was prepared, whether or not there is a sauce, and what ingredients were used. Share a taste of a new food item with a friend.

Ask a small group of friends who are interested in making delicious dishes out of ordinary foods to join you in starting your own gourmet club. You could take turns preparing the foods. Or you could dine out together in nearby gourmet restaurants. Wouldn't you like to become a connoisseur of food?

## Subject Matter

## Suggested Activities

tures, by travel or by living abroad, many have learned to prepare or adapt these foods and plan for their use in a whole meal. Now it is time to plan a gourmet tour of Texas cultures. Let's start our plans by selecting a cuisine.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Realize the variety of ethnic foods indigenous to Texas.
- Name three ethnic groups in their community.
- Name some traditional foods of various ethnic groups.

### Recognition

- Smile and recognize those who provide leadership to the group.
- Appoint a committee to plan, prepare and serve international fare as a money-making project for the club.
- Select one member to tell about the featured ethnic group during the international party. The report should include the group's history in Texas culture, its food preparation methods and its traditional foods.

Have 4-H members prepare three meals from different countries for their families. Plan for a gourmet meal and one that carries out the theme of the country. Some items will need to be bought in specialty stores or foreign sections of the supermarket. If you cannot find the item, then you may have to adapt certain American ingredients into ethnic recipes. Determine the cost of a special ethnic food for a family meal. Many ethnic recipes may even be cheaper than an American style meal. Decorate your table. Take the entire responsibility for treating the family to an international dinner.

Ask members if their families subscribe to gourmet or food magazines. Let members in the group discuss them.

Have 4-H members organize an international party for the 4-H club. Select a foreign theme. Plan the meal, party or tasting bee using the theme of one country. Have each 4-H member bring a covered dish from the specific country for others to taste. Have volunteers perform or entertain the group to carry out the cultural theme. Decorate the room and select appropriate music to set the atmosphere for a fun evening in Spain, Italy or the country of your choice.

# Lesson 10. Select a Cuisine

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## Objectives

4-H members will learn that many ethnic groups have influenced our food habits and that food preparation and food choices differ among various ethnic groups.

## Before the Meeting

- Ask the county Extension agent to copy the handout “Ethnic Groups Influencing Texas Cuisine.”
- Buy a recipe file, dividers and cards to show 4-H member how to make a foreign foods file.

## Equipment/Materials

- Copies of handout “Ethnic Groups Influencing Texas Cuisine”
- Recipe file and cards
- Pencils and paper
- Newsprint and felt tip pens

## Time

30 to 35 minutes

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## Subject Matter

Are you ready now to join the gourmet tour of the Texas culture? The Texas culture is really a blend of many ethnic groups who brought their own favorite foods and recipes with them. Have you ever stopped to think about how much we learn about people when we study their native foods?

Let’s take a look at just a few of the many ethnic groups whose foods have influence on Texas cuisine. We only have time to visit eight cuisines on this tour. Study each group’s history, methods of food preparation and some of the favorite foods. It is easy to see how, with a little imagination, a cook can turn the most basic ingredients into a gourmet’s delight.

## Criteria for Measuring Progress

Each participating 4-H member can:

- Imagine how to add gourmet touches to ordinary foods.
- Find and use some foreign cookbooks, gourmet magazines and other resources to prepare new dishes.

## Suggested Activities

Discuss Ethnic Groups Influencing Texas Cuisine, as well as any other major ethnic groups in your county or district.

Help 4-H members start a foreign foods recipe file. Suggest using regular file folders or a card file. Collect foreign recipes and historical information about foreign holidays or religious celebrations. Learn a variety of foreign cooking terms or dishes. Start first with a Mexican Cuisine File. Write the Spanish terms on the board or paper. Ask members to find definitions of these terms if they do not know them already. Some Spanish terms are:

pinole (pi-NO-lah)  
chocolate (cho-ko-LAH-tay)  
empanados (em-pah-NAH-das)  
enchiladas (en-chee-LAH-dahs)  
flan (flahn)  
frijoles (free-HOLE-ays)  
frijoles refritos (free-HOLE-ays ray-FREE-tohs)  
guacamole (wah-kah-MO-lay)  
masa (MAH-sah)  
menudo (me-NEW-doe)  
tamale (tah-MAH-lay)

## Subject Matter

## Suggested Activities

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- Understand the Spanish words for some foods.

### Recognition

- Smile and recognize those who provide leadership to the group.
- Ask for volunteers to perform a role playing skit set in a French or Mexican restaurant.

tacos (TAH-kohs)  
tortillas (tor-TEE-yahs)  
tostados (tohs-TAH-dohs)  
chiles (CHEE-lays)

## Ethnic Groups Influencing Texas Cuisine

<b>Cuisine</b>	<b>History as part of Texas cultures</b>	<b>Food preparation</b>	<b>Favorite or typical foods</b>
Afro-American	Afro-Americans were captured in Africa and brought to the United States and Mexico. During the years that Spain ruled Texas, the blacks continued to settle in Texas. The Afro-Americans settled in San Antonio, East Texas and the rich lands of the Brazos and Trinity River Bottoms. In addition, many of the settlers from other parts of the United States brought Afro-American slaves with them.	Referred to as southern cooking. These cooks possess the fine art of turning common ingredients into delicious and nourishing foods. Meats are frequently fried or barbecued. Vegetables are seasoned with salt pork.	Favorite foods included pork, fried catfish, black-eyed peas, home-grown greens, sweet potatoes, hominy, grits, molasses and cornmeal breads, such as hotcakes or hush puppies.
FRENCH	The French first arrived on Texas shores in 1685 with the explorer LaSalle. Many French still remain in Castroville and Louisiana-born Cajuns are found in the Orange, Port Arthur and Beaumont areas. Long-established celebrations have helped maintain French traditions such as the July 14 celebration of Bastille Day, the French equivalent of July 4.	French people know how to use economical cuts of meat, including organ meats. They prepare vegetables in small amounts of water. They use herbs such as garlic, sweet basil, parsley, rosemary and thyme, salt and pepper. Wine is used in many dishes and in sauces. Sauces help French cooks change ordinary foods into specialties. They use cheese frequently. Eggs are often cooked in omelets or souffle.	Favorite foods include seafood, poultry, beef, warm goose liver pate, soups served hot or cold, green salads with simple French dressing, crusty French bread with garlic butter, milk usually served hot with coffee (cafe au lait) and cheeses (gruyere, Brie, cammenbert, Parmesan and Roquefort.) Favorite desserts include fruit, pastries, crepes and souffles.
GERMAN	German families make up the fourth largest ethnic group in Texas. They settled in Austin's colony in 1831 and many other places such as Llano, New Braunfels, Fredericksburg, San Antonio, Houston and Galveston. They brought with them their German customs, traditions and foods.	Meats are often cured or made into sausage. One favorite is sauerbrauten, beef marinated in vinegar and raisin solution. Dumplings, potatoes and breads are main starches or complex carbohydrates in the German diet. Canning fruits and vegetables is a popular way to preserve produce for later use.	Veal and fish are favorites with Germans. They also eat chicken, turkey, pork and beef. Potatoes in the form of potato pancakes, cake, and potato salad, and sauerkraut (cured cabbage), cured meats, sausage, dumplings, cottage cheese, sour cream, milk or buttermilk are all popular foods. Cakes and breads containing caraway seed and pumpernickel are eaten regularly. Wine and beef are also popular.

<b>Cuisine</b>	<b>History as part of Texas cultures</b>	<b>Food preparation</b>	<b>Favorite or typical foods</b>
GREEK	Greeks immigrated into Texas in the 1880's. With 6,000 Greeks in Texas in various occupations, Greek traditions are kept alive.	Many Greek recipes call for olive oil and wine with a blend of cinnamon, allspice and nutmeg to produce Kapama to flavor beef, lamb, and chicken pilaf. Cumin is used to flavor beef and fresh dill is used with lamb. Mint, garlic and oregano are also used. Lemon juice is used to flavor and tenderize meat. Meat is prepared as shish kabobs (meat on a stick). Black olives (Calamata) and feta (goat cheese) are also used in cookery. Filo dough pastries are also popular. Fruit is often dried in thin sheets to make fruit leather.	Feta cheese and black olives combined with fresh vegetables in a peasant salad are popular. Eggplant is a popular vegetable and grapevine leaves are stuffed with rice and lamb. Lamb, beef and chicken are eaten frequently. Filo dough (a flaky pastry) is used in spinach and feta cheese pie and Baklava dessert. Strong coffee is common.
ITALIAN	Italians first immigrated to Texas in small numbers. By the 1880's larger numbers came to Galveston, Houston, San Antonio and the Brazos and Red River areas.	Italian cooks use spices and herbs including thyme, bay leaf, oregano, marjoram, rosemary and basil. Rosemary is added to lamb and pork roast. Basil, oregano and garlic are used in tomato sauce. The basic cooking oil is olive oil. Pastas such as spaghetti or macaroni, as well as corn and rice are used. Tangy tomato sauce, Parmesan cheese and mushrooms are part of many Italian dishes and serve to stretch meats. Fresh vegetables are prepared in salads. Frozen desserts are traditional.	Pastas are served with tomato sauces and meat in a variety of forms, such as lasagne or spaghetti, and are highly seasoned with garlic and other spices. Italians enjoy green salads with olive oil and vinegar dressings. They eat fish, fowl and meats. Cooked vegetables include eggplant, spinach, artichokes, green beans, carrots and cauliflower with Italian seasoning. Bread sticks or Italian loaves spread with garlic butter are popular. The Italian pizza pie is also popular. Desserts are fruit and cheese, fruit cookies and frozen desserts such as spumoni or Neapolitan ice cream.
JEWISH	The Jewish, unlike most groups which were from one nation, settled state-wide. Many came from Germany, France, Prussia, Lithuania, Poland and Austria-Hungary. One religious law restricts eating milk and meat foods at the same meals. Today some religious Jews keep these Kosher laws and also use separate dishes for meat and milk foods.	Chicken or meat is usually boiled or roasted, with the broth used to season dumplings, noodles, rice and barley. Bread called challah is braided or twisted. Dessert would be honey cake, sponge cake or cookies. Fruits are eaten fresh or stewed. Tea with lemon is popular. Pickled products are also prepared.	Jewish favorites are bagels (a doughy roll with a hole), lox (cured salmon) and cream cheese. Blintzes are thin pancakes rolled with cottage cheese and eaten with sour cream. Chicken soup, baked chives, gefilte fish, smoked fish, chopped liver, potato cakes, tea, sweet wine, macarons and fruit compote are favorites. Matzo, a flat, cracker-like, unleavened bread, is popular. Pickles and relishes add zest to meats.

<b>Cuisine</b>	<b>History as part of Texas cultures</b>	<b>Food preparation</b>	<b>Favorite or typical foods</b>
MEXICAN	After Texas won her Independence from Mexico in 1836, the influence of Mexican ranching, agriculture, law and cooking remained. Mexican foods and cooking include many spices. Typical Mexican foods in Texas are tortillas, beef, venison, chicken, eggs, cheese, milk and sometimes chocolate, tea and sugar.	Foods are hearty, filling and highly seasoned with peppers, comino (cumin), coriander, cilantro, onions and garlic. Corn is ground on a stone called a metate and combined with lime water to make a paste called masa. A small pinch of masa is patted by hand into a flat griddle cake called a tortilla. Avocado is usually mashed into a paste and seasoned with favorite Mexican spices in a dish known as guacamole.	Favorite foods include chile carne (chile-flavored meat); beans that are refried and garnished with cheese; and corn tortillas in the form of tostados, tacos, and enchiladas. Fish and chicken are also popular. Fruit such as bananas, pineapple and fruits of the cactus plant are also popular. Beverages include Mexican hot chocolate and pulque (a drink made from pomegranates). Eggplants, chile peppers, avocados, vanilla, peanuts and chocolate are favorites.
ORIENTAL (JAPANESE & CHINESE)	Railroads brought the first Chinese to Texas. They were laborers on railroad construction in the Brazos Valley in 1870. The Japanese came with the first settlers and were agriculturists. Orientals continue to respect and enjoy their ancient cultural traditions, but they usually observe most American traditions.	The way food is cut up to prepare it sets oriental cuisine apart. Pieces of food are cut in uniform size so they will cook the same. The food is very colorful and often cooked using the stir fry method. Many vegetables and meats are stir fried in little fat. This method of cookery preserves full color and texture. Some meats and fish are eaten raw with a sauce. Deep fried fish and meat are also popular.	Fish and steam and fried rice are principal foods. Soybeans are eaten in many forms such as steamed or fermented beans, bean paste and bean sprouts. Favorite vegetables are pickled radishes, white carrots and salted cabbage. Sweet and sour sauces on meats such as pork or chicken are popular. Egg-foo-young (similar to an egg omelet) is popular. Fortune cookies and almond cakes are popular desserts.

Information adapted by Extension Foods and Nutrition Specialists, Texas Agricultural Extension Service, The Texas A&M University System, from *The Melting Pot, Ethnic Cuisine in Texas*, The Institute of Texan Cultures of the University of Texas at San Antonio, San Antonio, 1977.

# Lesson 11. Balancing the Diet Within Certain Cuisines

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## Objectives

4-H members will learn that all ethnic groups should plan nutritious meals from basic food groupings, including traditional food choices.

## Before the Meeting

- Gather materials to prepare a bulletin board depicting locations of ethnic groups in Texas and their traditional foods.
- Ask the agent for a copy of USDA's *The Food Guide Pyramid*.
- Check out copies of foreign cookbooks from the local library or have 4H'ers bring them.
- Prepare Mexican flan the night before the meeting.

## Equipment/Materials

- Newsprint and felt tip pens
- Foreign cookbooks
- Mexican flan
- Souffle cups and plastic spoons for serving flan
- Bulletin board materials (poster board, felt tip pens, pictures from travel brochures, map of Texas, etc.)
- USDA, *The Food Guide Pyramid*

## Time

30 to 35 minutes

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Subject Matter	Suggested Activities
<p>The quick tour within just eight of the many Texas ethnic groups has pointed out how cultural history and traditions affect food likes and dislikes. We have seen that the Germans' likes and dislikes may differ from those of the Mexicans or Orientals. But all of these people, regardless of ethnic group, need the same nutrients to live, grow and maintain their health. Each group, because of the cultural differences, will probably obtain the nutrients they need from different foods. Also, the method of preparing and serving the food will differ from one group to another. Even the way one ethnic group celebrates a holiday may differ as their traditions differ.</p>	<p>A French menu may be organized like an American one with appetizers, main courses, salads, desserts and beverages, or it may be arranged differently. Using cookbooks you can find at the local library, write down some of the various French foods under the appropriate section in the handout. Become familiar with some of the French terms used on the menu and in French cookery. In addition, explore the menus of some of the other ethnic groups who settled in Texas. Make a menu for a restaurant of another ethnic group.</p>

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## Subject Matter

Eating a balanced diet from the basic food groupings, based on the Recommended Dietary Allowances, is still the best way to plan daily food intake. Although several of the ethnic groups do not ordinarily drink milk with their meals, they still need the recommended servings from that group. Greeks or Mexicans may look to cheeses or fermented milk products such as yogurt or buttermilk for some of their daily intake of calcium.

All people, regardless of ethnic group, need the same nutrients. Ethnic menus should be planned according to the basic food groupings. Ethnic menus do need to contain two or more servings from the milk, yogurt and cheese group (teens need four servings); two 3-ounce servings from the meat, poultry, fish, dried beans and eggs group; three to five servings from the vegetable group; two to four servings of fruits; and six or more servings of bread, cereal, rice and pasta group foods. The fats, oils and sugars group provides mostly calories so choices from that group need to be selected very carefully according to the number of calories needed daily.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Compile a foreign foods file.
- Read a French menu.
- Plan and serve traditional ethnic holiday foods.

## Suggested Activities

Holiday foods and traditions owe much to the rich heritage of particular ethnic groups in Texas. For the eight cuisines we visited on the gourmet tour of Texas, refer to resources such as foreign cookbooks, travel guides or reference books to study the holiday celebration traditions for the groups. Plan a celebration using some "Old Country" recipes. Plan and prepare some of the specialties from one or more of these ethnic groups.

Take time to analyze the nutritive contributions of the diets of each of the eight ethnic groups on our tour of Texas culture. Study the favorite foods of each ethnic group, determining how the ethnic group would meet the requirements of The Food Guide Pyramid to plan a nutritious meal. Complete the chart by including possible foods under each group which the ethnic group member might eat to fulfill the daily requirements.

	Food Groups					
Cuisines	1	2	3	4	5	6
Afro-American						
German						
Greek						
French						
Jewish						
Mexican						
Oriental						

\*1 = Meat, poultry, fish, dried beans and eggs

2 = Milk, yogurt and cheese

3 = Fruit

4 = Vegetables

5 = Bread, cereal, rice and pasta

6 = Fats, oils and sweets

Display the Mexican flan you prepared the night before the meeting. Discuss the Mexican flan (flahn) as an excellent source of calcium. You can discuss the recipe, how to prevent separation of protein while cooking and the stability of the mineral calcium in cooking. (Garnish with several bunches of fresh grapes, dipped first in egg white, then in granulated or powdered sugar. Place on dish around edge of flan. You may want to demonstrate how to

## Subject Matter

## Suggested Activities

### Recognition

- Have a spice smelling game. Award winner with a bottle of spice and a foreign recipe to try.
- Give copies of *Bon Appetite* or *Gourmet* magazine to the 4-H members who volunteered to prepare an exhibit for the group.
- Ask members to demonstrate ethnic dances.
- Smile.

frost grapes. ) Hand out Mexican flan recipe. Give 4-H members a small sample of the flan.

Or, you might have 4-H'ers prepare a flan at the meeting.

Have a spice smelling test using spices common to different cuisines. Have 4-H members try to identify the spices.

Plan a menu for an ethnic group in Texas. Select an ethnic group that you are particularly interested in learning more about. Use a foreign cookbook, reference books and resource people to help you gain a better understanding of this ethnic group's customs, food intake and possible deficiencies of nutrients if certain food groups are lacking. In some countries the time of meal service differs from the usual three meals a day. Compare your meal plan to the Food Guide Pyramid for a general comparison to see if the recommended servings from each group are included.

Let two volunteers prepare an exhibit on a bulletin board or poster in the shape of the state of Texas. It should depict the influence of these ethnic groups on food customs in different parts of the state. Show where the different ethnic groups first settled in Texas and which parts of the state have high concentrations of these ethnic groups. Ask 4-H'ers to use the exhibit to present a program about ethnic foods in Texas to their 4-H club or social studies class, or to a civic group or senior citizens group. Discuss the cultural aspect of foods as well as nutritional differences, preparation techniques, food favorites, etc.

## MEXICAN FLAN

Flan or caramel custard, a popular Mexican dessert, is an egg custard baked in its own caramel sauce. This is a nutritious Mexican dessert, rich in calcium, phosphorus, iron and protein. Calcium is a very stable nutrient and is not affected by cooking or heat.

- 8 eggs\*
- 1 3/4 cups granulated sugar
- 1/4 teaspoon salt
- 2 large cans evaporated skim milk
- 2 teaspoons vanilla
- 1 teaspoon almond flavoring

Melt 1 cup of the sugar over very low heat. Pour into a mold, tilting to make sure that melted sugar covers the bottom and sides of the pan completely. Allow to cool. Beat whole eggs in blender until well blended. Add 3/4 cup granulated sugar and salt. Beat in evaporated milk, vanilla and almond flavorings. Pour into the sugar-lined mold. Place mold in a pan of water in the oven at 350 degrees F. about 1 1/4 hours, or until a knife inserted in the center comes out clean. (It is placed in a pan of hot water to prevent the egg-milk [protein] mixture from denaturing or separating into a watery liquid.) Refrigerate overnight. Before serving, run knife around edge of pan and turn out onto small platter.

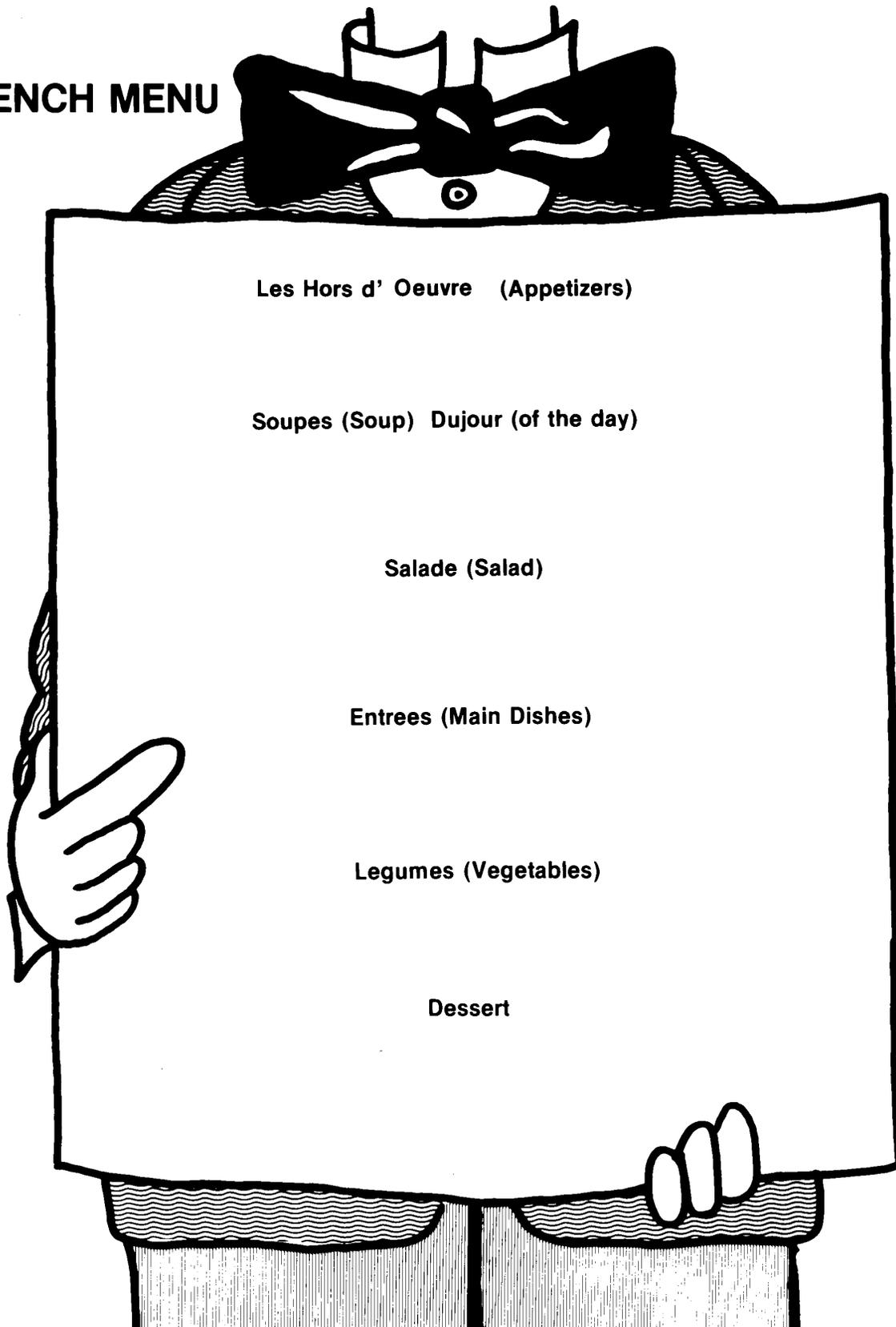
\*You could substitute 16 egg whites for the eight whole eggs to reduce cholesterol content.

Garnish idea: Dip several bunches of grapes in beaten egg whites. Then dip in granulated or powdered sugar. Place around flan and serve.

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Recipe adapted from "De Grazia and Mexican Cookery", Rita Davenport, Arizona Highways, Phoenix, 1976, and Arizona Cookbook, Golden West Publishers, Phoenix, 1976.

# FRENCH MENU



**Les Hors d' Oeuvre (Appetizers)**

**Soupes (Soup) Dujour (of the day)**

**Salade (Salad)**

**Entrees (Main Dishes)**

**Legumes (Vegetables)**

**Dessert**

# Lesson 12. The Evolution of Processed Foods

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## Objectives

4-H members will learn about food processing changes, a variety of food processing methods and the effect of food processing on lifestyles.

## Before the Meeting

- Ask the county Extension agent to make copies of L-2022, *Preserving Food at Home*, enrollment form.

## Equipment/Materials

- L-2022, *Preserving Food at Home*, enrollment form
- Pencils and paper
- Numerous magazines and newspapers
- Scissors
- Various processed foods

## Time

35 to 40 minutes

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Subject Matter	Suggested Activities
<p>More than ever before, people from single and two-person households, employed homemakers, youth with more money to spend and older adults eat meals and snacks away from home. These different lifestyles and changing social trends affect food patterns. For quick and easy meals to help consumers cope with these busy lifestyles, more people are buying either convenience foods (foods to which labor saving services have been added) or processed foods (foods preserved to increase their shelf life).</p>	<p>One way of processing food in the home is food preservation. Ask the county Extension agent to enroll 4-H members in the Food Preservation mailout series. Provide a copy of the L-2022, <i>Preserving Food at Home</i> mailout series flyer to the interested 4-H members. If the Food Preservation mailout series is not being offered at this time, then ask members to visit the Extension office and get a copy of a food preservation bulletin.</p>
<p>At home, consumers may enjoy preparing and freezing certain dishes to eat later. Or, they may want to preserve fruits or vegetables. Does your family preserve foods? Which method of preservation, canning or freezing, is most commonly used? Think about the intended use of the preserved food when planning which preservation method to use (e.g., dehydrated or dried fruit leather for a camping trip or frozen instead of canned peas because a family member dislikes canned foods). Many people preserve foods at home because they have a family member on a spe-</p>	<p>Have members of the group demonstrate various methods of food preservation: canning low acid foods; drying; freezing; and pickling.</p>

## Subject Matter

## Suggested Activities

cial diet. How could this be useful for a person who has diabetes or a person on a weight control diet?

The food industry has changed dramatically in the last 20 years to keep their products appropriate for lifestyle changes.

Some of the changes in the food industry to meet these changing needs are:

- Changing methods of preserving foods (especially freezing, freeze-drying and drying).
- Rapid growth in convenience products and ready-to-cook products and meals (meals which simply need reheating).
- Production of more ready-to-eat products (yogurts, cereals, space foods).
- Greater demand for snack foods for eating “on the run,” such as beef jerky, breakfast bars, etc.
- Packaging to fit the needs of the smaller family unit (one- and two-person households can buy individual or double servings of various foods).
- More foods low in fat, sugar, sodium or cholesterol because of increased consumer demands for these healthful products.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Name newer types of processed food on the market.
- List newer food processing methods.
- Discuss how food processing companies consider consumers’ lifestyles.

### Recognition

- Thank members for participating in the discussion.
- Thank members for presenting demonstrations.

Ask 4-H members to interview several employed homemakers about concerns they have about food buying, use of convenience foods, meal planning and preparation, food safety and storage, eating away from home and packing lunches. What are some ways that employed homemakers can organize their food management responsibilities to allow more time to be with their families? At a future meeting, discuss the results of interviews with the 4-H club members and the county Extension agent. Let the club members describe ways to assist employed homemakers with these decisions.

Save numerous advertisements for food from newspapers and magazines. Listen to some of the ads on the radio and television. How is the information in these ads directed toward various groups or audiences (e.g., Saturday morning television ads directed towards youth)? In other words, what gimmicks in advertising do you see directed towards:

- employed homemakers;
- more affluent youth;
- the elderly; and
- single- and two-person households?

Consider the types of information given about the food advertised. How does the ad appeal to the needs and desires of each group? Are there differences found in the different ads in newspapers, magazines, radio and television? What differences did you find?

# Lesson 13. Convenience and New Foods

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## Objectives

4-H members will learn about the variety of new convenience foods and how to include these foods in planning menus based on the daily food groupings.

## Before the Meeting

- Obtain B-1413, *Nutritive Value of Foods* and the Master Mix demonstration materials from the county Extension agent.
- Ask the agent to make copies of the handout “Convenience and New Foods Meal Planning Chart.”

## Equipment/Materials

- B-1413, *Nutritive Value of Foods*.
- Master Mix demonstration materials (optional)
- “Convenience and New Foods Meal Planning Chart”
- Newsprint and felt tip pens

## Time

35 to 40 minutes

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## Subject Matter

Imitation meat? Boil-in-a-bag vegetables or meals? Flip top cans? Dehydrated foods? These are just a few of the convenience foods available. Convenience foods are labor-saving foods that reduce the time and energy required for preparation. Examples include cake mixes, skillet type dinners and frozen desserts. The need for fast meals, whether cooked at home or purchased at a fast food restaurant, reflects the needs of a modern lifestyle. Fast-food outlets encourage people to eat out by using catchy slogans to attract customers. Can you recall some of the catchy advertisement slogans of the fast-food outlets? Fast foods can be selected carefully to ensure a balanced diet. Many of these foods are fried so care must be taken to ensure that you do not eat more than you can afford calorically.

Some convenience foods contain soybean products. The soybean is a vegetable with high amounts of protein, essential vitamins and minerals, especially calcium, phosphorus and some iron. Soybeans can be processed in several forms and are marketed as bean sprouts, soy flour or texturized vegetable pro-

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## Suggested Activities

Ask 4-H members to volunteer to present a method demonstration to employed homemakers about the master mix as a convenience food to make at home. Get the basic recipe for the master mix from your county Extension agent prior to the program. Compare its cost with the prices of similar convenience foods purchased at the grocery store. Discuss employed homemakers’ concerns about food and nutrition.

Take an inventory of vending machines in three different places (e.g., schools, hospitals, offices, city recreational buildings or parks, laundromats, etc.) What types of foods did you find most frequently? Ask the person in charge of the vending machines how foods are selected to be sold in the machines and which foods are the most popular. Also ask if refrigerated machines are available. If not, why not? What could you advise to add or take out of the vending machines? What information would you base this recommendation on?

Ask members to plan a nutritious meal (see chart) using convenience foods in the basic

## Subject Matter

## Suggested Activities

tein which can be added as an extender to meat.

It is of utmost importance that quick meals also be nutritious so that the nutritional needs of family members can be met without going above each family member's calorie limits.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Analyze various food advertisements and understand how they are aimed at intended audiences.
- Prepare and use master mixes as a home-style convenience food.
- Plan nutritious meals that contain convenience foods.

### Recognition

- Thank members for open discussion in the meeting.
- Thank 4-H'ers for their reports on vending machines.

food groupings. Compare the cost of a lunch from the school cafeteria, a fast-food establishment and a lunch packed at home. Ask the owner of the fast-food establishment for the nutritive value of the food items. Also refer to the *Nutritive Value of Foods* reference obtained from your county Extension agent. Record the food calories and check the servings of each food group.

## CONVENIENCE AND NEW FOODS MEAL PLANNING CHART

**(Use for planning lunch menus.)**

	Bread, cereal, rice and pasta	Vegetable	Fruit	Milk, yogurt and cheese	Meat, poultry, fish, dry beans, eggs and nuts	Fats, oils and sweets	Total servings
School							
Fast food establishment							
Sack lunch							

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Which lunch did you find to have the highest number of calories? Can all lunches contain servings from each group and/or be considered nutritious? Decide what advice about meal planning you would give to some one who has to “eat on the run” every day.

# Lesson 14. A Look At Food Changes in the Year 2030

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## Objectives

4-H members will recognize probable changes in foods of the future.

## Before the Meeting

- Write the word “analogue” on a piece of paper.

## Equipment/Materials

- Manila folder to hold newspaper articles
- Newspaper and magazines articles
- Newsprint and felt tip pens
- A card or piece of paper with the word “analogue” written on it

## Time

35 to 40 minutes

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### Subject Matter

Will technology and the demands of our busy society affect future food products? If the past predicts the future, then we can look for many changes.

#### One scenario:

By the year 2030, instead of shopping for food for your family at the grocery store, you may bring home food from the nutrition supply center. Of course, as you check out labels on food products will be passed over a computer scanner which will record all the food you buy and transfer the information to your home computer. The computer then will keep track of all meals served. It will subtract all food used from the food inventory. This will help the space age family to know which foods are on hand and which foods are needed.

The computer will keep up with the height, weight, age and number of family members. That way it can predict the number of calories and key nutrients needed daily by each family member.

The computer will predict what a suggested menu for a certain day and person should be, based upon the activity or energy needed for the next day.

### Suggested Activities

Have 4-H members keep a manila folder of newspaper and magazine articles that tell about technological developments in food processing that have an influence on future eating patterns. Discuss what changes may occur in our future food products.

Divide members into groups. Ask them to imagine what their community will be like in the year 2030. In other words, have them develop a vision for how food, clothing and housing needs will be met within their community. Provide them with newsprint and several colored markers so they can draw as a group what the community situation will be like in 2030. Let each group present its picture to the rest of the members.

Ask 4-H members to write to the food technologists at the NASA space center for information about future foods in each food group. Also, members can write to various food companies such as Campbell Soup, Kellogg or Green Giant about some of the foods they predict will be available in the year 2030 (check food labels for the addresses of the companies). Have members discuss what they have learned within the group.

## Subject Matter

## Suggested Activities

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The kitchen will now be called a nutrition module. On the way to work you will probably eat a food bar or space bar. This type of meal or bar will come in a variety of flavors — pizza, hamburger and ham and eggs. And, these will be packed full of the nutrients required of a complete meal. Mending bars will be eaten when you are sick because they provide extra nutrients. These will be the future convenience foods because they will be quick, cheap and nutritious.

The old-fashioned meals we have today will still be prepared sometimes, except that in 2030 foods will not come in cans, jars or bottles because using these materials is wasteful. Food will be in “see-through” packages.

The “nutrition module” also will be different than the kitchens we have today. Refrigerators will be gone because a special microwave process will seal in freshness. It will be possible to store all foods up to 2 years.

A quick chilling unit will be on the counter so that you can still sip your soda or milk cold.

At the nutrition supply center you can shop for fresh tomatoes. They will be square to make packaging easier. Farmers will have experimented until they found a tomato that tasted good and was easier to pack.

Food analogues will be plentiful. An analogue is a food product that resembles a food in appearance and nutrient content. The analogue may resemble a piece of lean meat. However, it will be made of a different food such as soybeans, peanuts, safflower, oats or corn. Some will resemble cheese, some will resemble carrots, etc.

Fruits and vegetables will be larger. With more people to feed, farmers will have learned to improve food plants. Plants will have large edible parts but small roots. Oranges will no longer have seeds. Shells of nuts will crack without a nutcracker.

Fish will be better harvested and managed in oceans. Meat will be leaner and will be tenderized with electricity.

Hold up a card with the word “analogue” printed on it as you discuss food analogues.

## Subject Matter

## Suggested Activities

Here is what the menu may include: steak prepared in the energy efficient solar oven; a small baked potato; lettuce and tomato salad with a bit of avocado; milk and fresh strawberries topped with yogurt.

During the next 50 years, we can expect to see many of these changes in food, but when it comes to your favorite future dinner, probably the good old-fashioned meal will remain a favorite. Only the future really holds the answer.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Actively participate as a member of a committee to plan for future goals.
- Obtain resources from various companies, governmental food services such as NASA, and other reliable sources.
- Prepare a bulletin board about futuristic food.

### Recognition

- Thank members for open discussion in meeting.
- Recognize committee members. Ask them to give their findings to the group.
- Let committee members write a newsworthy article and give it to the agent.

Ask the president of your 4-H club to appoint a committee of 4-H members to study the year 2030 and foods in Texas. With the help of the county Extension agent, decide what aspects of food production and nutrition you may want to study (horticulture, computer science, food science, solar energy-engineering, dairy, etc.). Have the committee make recommendations about the types of educational programs which will equip them with the knowledge to handle technological changes in the 2030. This would be an excellent way to look into the future of food and nutrition related subject matter. Your findings would make an interesting news story. Let interested 4-H members develop a newsworthy article.

# Lesson 15. Food and Nutrition Careers Unlimited

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## Objectives

4-H members will learn about the need for more health professionals and the numerous food and nutrition careers that are available.

## Before the Meeting

- Ask the county Extension agent to make copies of the Food and Nutrition Career Corner word puzzle.
- Explore the library and/or ask nutrition professionals to loan you their food and nutrition professional journals.
- Collect several copies of newspapers to use at the meeting.
- Secure a recognition prize.

## Equipment/Materials

- Food and Nutrition Career Corner word puzzle
- Copies of several food and nutrition professional journals
- Newspapers
- Scissors
- Paper and pencils

## Time

35 to 40 minutes

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### Subject Matter

When the 21st Century dawns in just a few years, look for the population in the United States to increase to more than 300 million people, with 20 to 25 percent of the population over the age of 65. This demographic shift presents our nation with a most important challenge—maintaining the health and nutritional needs of a population that is growing older. To meet the needs of older persons we must understand the relationship of diet and nutrition and their influence on the processes of aging. This could help the elderly live longer with independence and high quality to their lives.

Why worry about the population growth? The obvious answer is that more food will have to be provided to feed the additional people, and their special food needs will need to be

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### Suggested Activities

Show several current issues of professional journals related to food and nutrition that are available in your local library. Record the names of the journals (e.g., *Journal of Family and Consumer Sciences*, *Journal of Food Science*, *Journal of Food Technology*, *Journal of the American Dietetic Association*, etc.). If possible, also show some of the journals that address the needs of the elderly (e.g., *Journal of Gerontology*). Review these journals to determine the type of subject matter they provide. Look in the local newspaper's classified section for various career opportunities, noting the description of the job, experience and training required, and salary ranges. Also see the USDA study on needed professions in the future.

## Subject Matter

## Suggested Activities

addressed. There will be even more career opportunities in food and nutrition fields.

Determine which careers in the field of foods and nutrition are available in your area. Research one of the careers you will find in the Foods and Nutrition Career Corner puzzle.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Name many foods and nutrition careers and the basic work performed by these professionals.
- Complete the Food and Nutrition Career Corner puzzle.

### Recognition

- Give a prize to the first 4-H member to complete the career puzzle in a given amount of time.
- Smile and congratulate all 4-H members for their participation during discussion periods.

For conducting the career search, have several copies of one of the newspapers from an urban area near you, as well as your local newspaper. Turn to the classified ads. Have 4-H members review the career opportunity section. Count the listings plus all other jobs directly or indirectly related to food. As a group, write a classified ad for a food and nutrition position. Refer to the examples you found in the newspaper. Suggest that 4-H'ers discuss food and nutrition careers with school counselors.

As you complete the word puzzle, consider the variety of food and nutrition careers, the description of the type of work and the training required. Discuss the various careers in food and nutrition with the group.

Explore resources to help meet the needs of the larger population of elderly persons in the 21st Century. Discuss what the nutritional needs of this population group are and how diet and nutrition influence the processes of aging. What are some things that you and your 4-H club members can do to help improve the quality of life of the elderly in your community?

# FOOD AND NUTRITION CAREERS

## **Baker**

Supervises the mixing and baking of the products in a large or small bakery. Vocational education recommended; on-the-job training required.

## **Butcher**

Prepares and packages cuts of meats for consumer use; may have purchasing and selling responsibilities in a grocery or specialty store. Vocational education or on-the-job training.

## **Caterer**

Prepares food and sometimes supplies servers and equipment for small and large, private and public functions according to customer's request. Works out of own kitchen or company kitchen. Education varies, but knowledge of preparing high quality foods and business administration helpful.

## **Chef**

Prepares and cooks one kind of food (for example, hot food, salads, etc.) in the kitchen of a restaurant, cafeteria, hospital or other institution. Chefs may be trained in hotel/restaurant management schools, vocational education or on the job.

## **Consumer Consultant**

Works in a grocery store or other retail shop; assists customers in planning meals and parties; chooses foods by advising store on latest nutritional, product and equipment information. College education required.

## **Consulting Nutritionist**

Works as advisor to nursing homes, small hospitals, doctors' offices, clinics. Advanced degree in nutrition and R.D. certification (from the American Dietetic Association) required.

## **Cooking School Teacher**

Teaches cooking in own kitchen, other people's kitchens or cooking school kitchen; often teaches international cuisine or other specialized foods (pastry, chocolate). Required education varies; cooking experience essential.

## **Cookbook Writer**

Writes free-lance or as food editor for newspaper, magazine or book publisher; plans books, supervises development and testing of recipes, checks accuracy of final product. College education in family and consumer sciences and/or journalism extremely helpful.

## **County Extension Agent**

Primarily responsible for family and consumer sciences and nutrition education for county programming. Works with Extension homemaker clubs, 4-H and other youth, and the general public. Employed by the Texas Agricultural Extension Service and serves as a representative of Texas A&M University in each county. College degree in family and consumer sciences is required.

## **Diet Assistant**

Helps registered dietitian in various settings with diet planning, food service or administration. Vocational education required.

## **Dietitian**

- **Administrative Dietitian:** Manages a food service system. May work in a hospital, school, industrial setting, educational institution, business or government.

- **Clinical Dietitian:** Manages the nutritional care of persons in hospitals, nursing homes and clinics as a member of a health team. College education in dietetics and R.D. required.

### **Dietary Worker**

May prepare, serve or clean up after meals in a restaurant, school cafeteria, hospital kitchen or catering establishment. High school or vocational education helpful; on-the-job training essential.

### **Extension Nutrition Specialist**

Responsible for assisting county Extension agents in planning, implementing and evaluating food and nutrition educational programs. Serves as a resource person for individual groups and mass media educational activities. Employed by the Texas Agricultural Extension Service. A graduate degree in food and nutrition is required.

### **Food Editor**

Plans, researches and writes articles or books on food for a newspaper, magazine or book publisher, or as a free-lance writer. College education in family and consumer sciences and/or journalism usually required.

### **Food Service Manager**

Manages operations, personnel, purchasing and menu-planning in a restaurant, school, business or hospital cafeteria. Education varies, but knowledge of business administration and family and consumer sciences is essential.

### **Food Scientist and/or Food Technologist**

Professional in food science and technology using modern science and engineering in manufacturing and selling of foods. Usually works for a food company; develops new products. College education in mathematics and sciences required. Higher degrees required for specialties.

### **Food Stylist**

Tests recipes and prepares food for still or television photographers. Works for major food companies or free-lance for publishers, food companies, advertising agencies or photographers. Required education varies; knowledge of family and consumer sciences and photography helpful.

### **Gerontology Dietitian/Nutritionist**

Dietitians/nutritionists that specialize in the nutritional needs of the elderly. The practice of nutrition education is limited to specific food needs of persons 65 years and older.

### **Grocery Store Manager or Supervisor**

Supervises day-to-day operations, budgets and personnel in the district office of a grocery chain or in a small store. Required education varies; knowledge of business administration essential.

### **Family and Consumer Sciences (formerly home economics) Consultant**

Develops educational programs, training materials, consumer communications and food demonstrations for industry. College education in consumer and family sciences required.

### **Family and Consumer Sciences (formerly home economics) Teacher**

Teaches one or more of the various courses in consumer and family sciences in a school, university or vocational school. College education in family and consumer sciences required as well as other certification required by employing institution.

## Market Researcher

Conducts studies and surveys to determine consumer needs and preferences, cost and pricing statistics for food company. Required education varies; knowledge of economics and statistical research essential.

## Public Health Nutritionist

Instructs clinic patients on sensible nutritional practices for specific health conditions, often in a special area of nutrition: obstetrical, pediatric or geriatric. R.D. certification and advanced degree in nutrition required.

## Research Nutritionist

Studies and researches the effects of diet on health. Works in a hospital, university, community health program or government health agency. R.D. certification and advanced degree in nutrition required.

## Specialty Shop Worker

May own, manage or clerk in a shop that specializes in groups of similar foods and/or equipment—for example, cheeses, candies and sweets, health foods, or cookwares. Required education varies; some knowledge of food and business administration helpful.

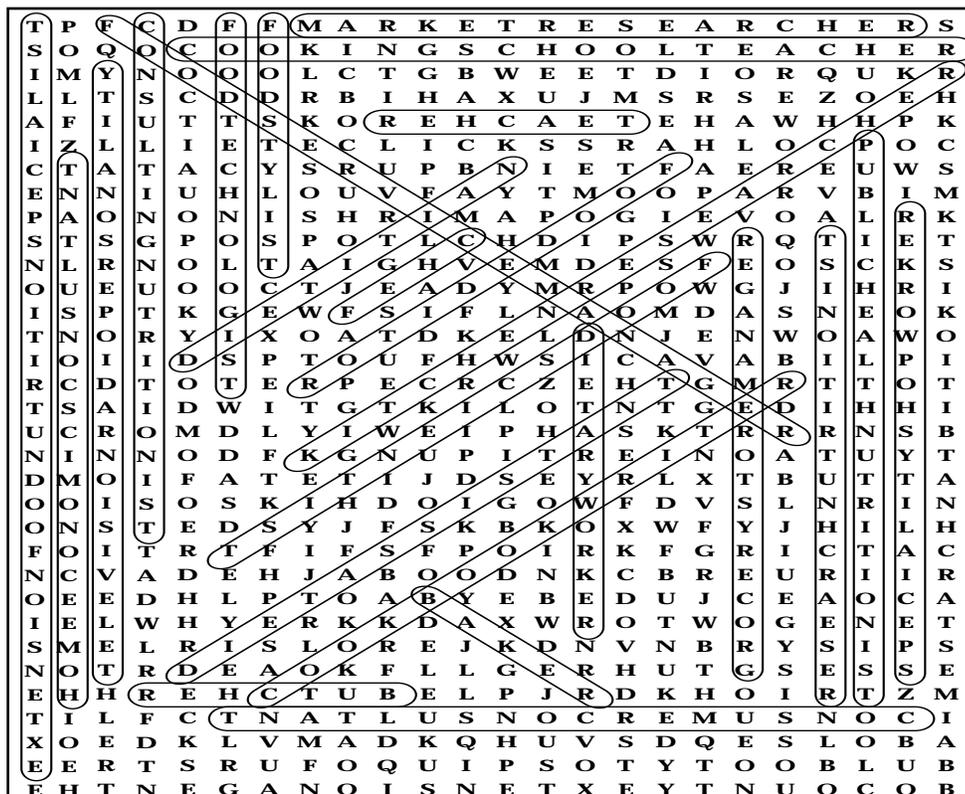
## Test Kitchen Researcher

Develops recipes for a food company, large newspaper, magazine publisher or television station. College education in foods and nutrition required.

## Television-Radio Personality

Works in television or radio studio and in the field; conducts informational programs on food and other areas of family and consumer sciences; demonstrates techniques and products; interviews guests; performs other duties as required by the format of the program. Required education varies: 2- or 4-year college education is helpful.

## Answers



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

# Lesson 16. Make Something Happen In Your Life, Plan for Your Goals to Success

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## Objectives

4-H members will learn what to consider in planning a career.

## Before the Meeting

- Ask professionals in the food and nutrition field to attend the meeting.
- Ask a counselor from the Texas Employment Commission and other career resource persons to attend the meeting.
- Get information from a school counselor about basic high school courses that can help prepare for a career in food and nutrition.

## Equipment/Materials

- Paper and pencils
- Newsprint and felt tip pens

## Time

35 to 40 minutes

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Subject Matter	Suggested Activities
<p>Certain considerations are important when planning for a career. What will the career have to offer in the way of personal satisfaction, security and personal growth, and economic rewards? What special abilities and training will be required?</p>	<p>Ask 4-H members to define the following terms related to food and nutrition careers. Have paper and pencils available so they can start a career guide notebook.</p>
<p>Personal satisfaction is very important in a career. Will the work be challenging and offer a variety of experience? It is important for a person to feel that he or she is making a real contribution. Personal satisfaction is reflected by a positive attitude and enthusiasm for the job.</p>	<ul style="list-style-type: none"><li>■ job</li><li>■ career</li><li>■ professionalism</li><li>■ personal job satisfaction</li><li>■ job security</li><li>■ job advancement</li><li>■ job burnout</li></ul>
<p>Security and personal growth are also important in planning for a career. Will there be opportunities to advance to a better position? Will the job be limited to certain places such as a city, or will travel be required?</p>	<ul style="list-style-type: none"><li>■ positive attitude</li><li>■ family and consumer sciences (formerly home economics)</li><li>■ food science and technology</li><li>■ dietetics</li><li>■ nutrition education</li><li>■ professional competency</li></ul>

## Subject Matter

The economic rewards are always a consideration. What about salary ranges? Are they in the same range as other industries?

Will special abilities and training be required? What courses or curriculum will be necessary to become a dietitian, a food technologist or an Extension nutrition specialist? What will be the financial aids or fellowships available to the person interested in pursuing a certain career.

Will the career demand that you have certain interests or skills?

Now is the time to make your plan for a successful career in your career guide notebook. Make something happen in your life by exploring the world through specialty fields such as food and nutrition careers. Carefully consider the challenges when planning your career. Enjoy combining your special skills and interests with service to other people.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Recognize how to determine qualifications required of a job by reading the classified section of the newspaper or trade journals.
- Understand the meaning of terms used in the job market.

### Recognition

- Let 4-H members lead the panel discussion with visiting professionals.
- Give a blue ribbon for the most complete career notebook.

## Suggested Activities

Have a panel of professionals in food and nutrition speak to the 4-H club meeting. Discuss personal satisfaction, security and personal growth, economic rewards and special training required. When contacting professionals in food and nutrition, tell them what topics you want them to discuss. Provide the 4-H club members with a handout covering the topics for the profession, similar to the example below. At the end of the session, teens will have some facts in a chart to judge what careers, of those discussed, were most interesting.

### CAREERS

1      2      3      4      5

Profession

Personal job satisfaction

Security & personal growth

Salary range

Special abilities and training required

Tell members what you learned about high school courses from the school counselor. Discuss the basic preparation for a profession. Write on newsprint the action plan (below). Ask 4-H members to copy this action plan and complete it individually.

### ACTION PLAN

Careers of interest

Basic preparation

Skills and interests

Salary

# Lesson 17. Food and Nutrition Careers in Our World

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## Objectives

4-H members will learn about numerous food and nutrition careers on the local, county, state, national and international levels, and the preparation required for these professions.

## Before the Meeting

- Secure file folders, labeled “Food and Nutrition Reference File.”
- Collect catalogs from Texas colleges from counselors at schools, or ask 4-Hers to bring some (also available from local library).

## Equipment/Materials

- Have members bring their copies of the Food and Nutrition Career puzzle from Lesson 15.
- File folder, labeled “Food and Nutrition Reference File”
- Newsprint and felt tip pens
- Texas college catalogs

## Time

35 to 40 minutes

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### Subject Matter

Food is one of the basic human needs, so this industry has been around since the beginning of time. The food industry is one of the world’s largest industries and is growing every year. The mysteries of how the foods we eat affect our health are the subjects of much scientific research. The science of nutrition (the study of how the body uses food) is more widespread than ever before.

Most supermarkets contain more than 12,000 items. The development of just one food product will involve the efforts of a large number of people with careers in food and nutrition. Food and nutrition careers are available on the local, county, state, national and international levels. Career opportunities in the food industry could include product research and development, food processing and packaging or marketing. All of these functions involve many food and nutrition professionals.

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### Suggested Activities

Refer to the Food and Nutrition Career puzzle in Lesson 15. Select several of the careers you would be interested in securing more information about. Write to several of the federal agencies, institutions of higher learning or professional associations to learn more about special career interests. Keep a Food and Nutrition Reference file or include the information in your Careers Notebook.

## Subject Matter

## Suggested Activities

Government agencies promote the health and well being of people on the local, county, state, national and international levels. Many food and nutrition professionals work in agencies of the United States Department of Agriculture, Department of Health and Human Services, or the Federal Drug Administration. They also work in the food industry, trade associations, Peace Corps, and cooperative Extension services to educate people about food and nutrition. Teaching and research in institutions of higher learning also require food and nutrition professionals. In The Texas A&M University System, careers might include food services manager, Extension food and nutrition specialist, or teacher and/or researcher for the Department of Animal Science, Human Nutrition Section.

A professional career in the area of food and nutrition can provide a wide range of opportunities and excellent benefits. Develop your skills in food and nutrition as well as your communication skills. Be able to communicate ideas and understand others' ideas and there will be few limits to what your future in a food and nutrition career might be.

### Criteria for Measuring Progress

Each participating 4-H member can:

- Discuss important considerations such as personal satisfaction, security and personal growth, economic rewards and special training required in finding a job.
- Identify basic skills, interests and preparations required for numerous jobs.

### Recognition

- Let the 4-H club sponsor a career day at school or at the next meeting. Awards for best professional dress would be appropriate.
- If a university or institute is located in your area, schedule a tour for members through the kitchen of the facility. Complement members for good behavior during the tour.

### Example:

Information	Career 1	Career 2
Career:	International consultant	
Position:	Extension program	
Responsibility:	Adapt U.S. technology and study for foreign country	
Skills required:	Knowledge and training in foods & nutrition subject matter	

Discover food and nutrition careers on the local, county, state, national and international levels. Demonstrate on brown paper how to set up a chart (as shown) in your food and nutrition career guide (spiral notebook). Write various resources such as the USDA, Peace Corps, etc.

Ask 4-H members if they have explored the universities or colleges in Texas offering family and consumer sciences, food and nutrition, dietetics, institutional management, food science or other foods and nutrition-related plans of study. Ask them to write to the universities to obtain the facts about a career in foods and nutrition. Plot a scheme for success by making a listing of basic high school courses. Now study the catalogues received from the various universities. List and discuss the major course work required in preparing for food and nutrition careers.

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