A nutrition education kit for food service training programs

Debra Malone

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A NUTRITION EDUCATION KIT FOR FOOD SERVICE
TRAINING PROGRAMS

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education: Vocational

by
Debra Malone
June 1995
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Approved by:

Ted H. Zimmerman, First Reader

Brenda Farrington, Second Reader

Date 6/12/95
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CHAPTER ONE

Introduction

The future trends and labor predictions indicate that individuals with education and training in food services and nutrition will have a wide range of career opportunities through the 1990's. These predictions are based upon a number of factors. With over 50% of women now in the work force, Americans are currently spending 40% of their disposable food budgets in restaurants or for meals prepared outside of the home, a trend which the National Restaurant Association (NRA) expects to continue (Stanley, 1982).

Americans are living longer and the public is becoming increasingly aware of the importance of a healthy diet and they are concerned with health and wellness (Sullivan, 1988). The population continues to become more diverse as different ethnic groups and growing numbers of elderly persons increase the need for education of food service workers and their knowledge about nutrition concerning special dietary needs (Stanley, 1982).

Today's consumers are more aware of the nutritional value of food. Because of this, food processors and restaurants have begun to provide consumers with a variety of foods that are healthy. Some restaurants now include "healthy heart" selections in their menus.
The 1984 *Food Industry Fact Book*, claims that the food service industry is the number one retail employer in America and the number one employer of women and teenagers. Currently, over eight million workers are employed in this 265 billion dollar industry. An article from the Food Institute...USA Today, states that America's new life styles have neglected to emphasize the need of teaching nutrition to food service workers.

Future planning is a basic necessity in the world of education; we are continually seeking ways to improve the quality of education and training (Copa, 1986).

Teaching methods and occupational education programs are continually evaluated, synchronized with the needs of industry, and updated in order to train for the jobs of tomorrow. The Labor Market Information data on current employment opportunities should be utilized as a resource for projecting current and emerging jobs and placement potential. The goal for vocational education is to keep the curriculum relevant, and the advisory committees are encouraging programs to take on new challenges (Copa, 1986).

Legislation is proposed to establish a statewide certification process and criteria for dietary workers in the food service and a course in basic nutrition is included in the criteria. Individuals with training in food service and some knowledge about nutrition increase their chances of employment for careers in the food service profession.
The process of nutrition education may be defined as the teaching of validated, correct nutrition knowledge. It is a way to promote positive development and maintenance of food. It encompasses quality preparation and productivity of food. The process begins with three goals: knowing what foods to eat, wanting to make wise choices, and liking eating the proper foods. The purpose of nutrition education is to create informed consumers and food service workers who value good nutrition and produce wholesome foods (Gershoff 1993).

As part of an effort to explore other areas of interests to the students in the food service training, a survey was conducted to see what other subjects the students wanted to learn in their program. The majority of the students want to know how food affects their health, nutrition, menu planning, food service equipment, and most of the students surveyed selected leadership skills as a wanted area of training. While they are particularly in need of employment and training assistance, they also need information regarding an understanding of food concepts. This will help to increase employability and give insight into the different careers available in the food service industry.

Fitzgerald (August 1988), discussed in the article, "The Power of the Full Time Vocational-Technical High
School," that new emphasis should be placed on scientific literacy.

The new interest and attention on math and science is increasing. Educators are realizing that they are an important part of the practical education needed by all students. Food service programs are a good arena to teach nutrition, which is a study of the science of foods. Many students will select this course only as part of the training. Students soon realize the importance of studying nutrition and how it relates to other careers in the food service industry.

The students enrolled in the food service training program have either planned to continue additional training in the industry, or just enjoy preparing food. In addition to learning how to manage a restaurant, students are developing the fundamental skills needed in other food service occupations. This will increase awareness of nutrition as a basis for understanding more technical and advanced aspects of operating a business.

Statement of the Objective

To develop an effective nutrition curriculum to be included as part of the vocational food service training programs. The intent is to use this information as a career path into other areas of the food service or food service/health industry. This study is to integrate
nutrition with information which pertains to the food service occupations. The study provides a curriculum that includes skills relevant to the food service workers. The students will be provided education on the many tasks and skills that will improve training and knowledge regarding other career paths available in the food service occupations.

Problem Statement

The vocational food service training programs teaches how to work in a restaurant or fast food industry. It should also include skills training and a course in nutrition that pertains to the food service workers. Basically, the student learns how to prepare hamburgers, French fries, how to take orders and how to wait on customers. The students need to increase knowledge so that when the training is completed, the student will be aware of other careers in the food service occupations.

Purpose of the Project

This curriculum project is a practical approach to the study of basic nutrition for the food service training programs. The purpose is to provide students with a curriculum which include elements of basic nutrition, table settings, leadership skills, cultural influences, and nutritious menu planning. This is a criterion-reference
curriculum targeted toward individuals who work in the food service industry. It includes principles in science and math related to food service occupations.

**Assumptions**

The assumptions are that students enrolled in the food service training programs are interested in careers in the field. It is further assumed that students will continue in the field food service industry, and will view nutrition as relevant information needed in food service related issues.

**Limitations**

The study is limitations are the hours of instruction the student spends in the classroom. Will there be enough classroom hours to teach the lessons?

**Significance of the Project**

High school students represent a population in which nutrition education is frequently desirable but relatively unexplored. Many studies have documented the limited knowledge of students. Food service training programs are ideal situations to provide nutrition education and career paths associated within the food service industry.

The significance is to include nutrition education in the food service training class, and to produce a higher quality of workers preparing food for the public. It is
also significant to use the vocational food service training programs as a career path into other occupations available in the food service industry.

Summary of Chapter 1

This project offers a practical approach to the study of nutrition for food service professionals. It is an attempt to expand the curriculum opportunities to include some added skills and issues that the workers may encounter working in the food service industry. Vocational education must continually change in order to keep pace with the workforce. The vocational education curriculum is an ongoing process.

This curriculum includes elements of basic nutrition and common modified diets. Emphasis is placed on recipe adaptation and menu planning for more healthful offerings.

Food service training and nutrition are related incorporated subjects in the curriculum. This curriculum will benefit the students and serve as an educational tool for workers.
CHAPTER TWO

Introduction

The challenges for vocational education are quite apparent. The curriculum should be work relevant. Basic skills and workplace skills must compliment each other. Educator and businesses must be able to work together to match workplace needs to learner needs.

Workplace training is one of the solutions to the skills gap problem. Recent research on learning skills finds that the programs teaching thinking and learning new tasks as competent. Work-based training programs are not only an effective method for skills acquisition, it is a way to advance into higher-paying, higher-skilled jobs.

Literature Review:

Workplace training makes it more likely that workers will come to understand the big picture: how context shapes the task and how contingent factors must be integrated into performance. Broader skills enable workers to make larger contributions to the productivity of the company and also go on through life acquiring new skills (Detouzos and Solow, 1993).

Curriculum is all planned outcomes for which the school is responsible. This definition highlights the major purpose of curriculum development. It is to identify the
broader goals, and more specifically, the objectives that instructors should strive to achieve.

The contrasting conceptions that guide much of contemporary curriculum development are: humanism, social reconstructionalism, institutional technology, and academic discipline orientations.

The state level curriculum studies are major efforts to revise and reform vocational educational curriculum in an attempt to be more effective (Copa, 1986). Copa mentions some of the recommendations as: (1) to develop a curriculum that would meet the needs of all students to prepare them for skills in business and industry; (2) to incorporate a group of competencies related to personal development included in the training; and (3) integrate the vocational fields into a coordinated program of instruction.

An effective curriculum is "a continuous, lifelong vocational development that includes perspectives, and expanding vocational and academic coursework" (Copa, 1986). There is a need for more modern programs in subject matter. Experimental methods of instruction and flexibility in the curriculum structure is needed to fit a variety of situations.

The vocational-technical programs are finding a need to expand their offerings in the curriculum by having more short term offerings of courses. This is a time for continuous improvement in vocational-technical education.
Changes are occurring in the workplace and so change must be in our vocational training (Goldstein, 1982). An article in *Vocational Educational Journal* by Lovejoy says the challenge of a new vocational-technical education is to "teach students the skills, and apply new information to new situations that may inevitably arise in the workplace."

National standards are being revised in education and curricula and educational outcomes of the students. Teachers should become aware of the coordination and integration of the curriculum with academic educators, employers and economic development agencies (McKarcher, 1995). The author emphasizes, as educators we should make young people aware of different educational opportunities available to them.

According to Goldstein, vocational programs objectives include of establishment partnerships among business and industry, to improve math, science and technology education. The goal is to develop curriculum materials with a business and industry centered theme. Supportive teaching teacher models use master teams to provide long-term development throughout the state. Lovejoy endorses interdisciplinary studies for the state of Oregon. (Goldstein 1992).

The area of added additional courses are in restaurant and food service occupations (Goldstein, 1989). Training is an essential component for delivery of quality food service
products, and is an ongoing process which is comprehensive, planned in advance, and performance based.

The goal for a level one food service operation training is to maintain efficiently the production and service of quality food. The industry also strives to meet minimum standards of quality, and continual training of their workers. A well-trained staff is essential for quality control.

Food service administrators and operators must recognize that a good training program also provides their workers with an opportunity for career advancement. The guide of Competency-Based Scope and Sequence for Vocational Home Economics programs is a valuable tool in implementing home economics at the local level. It includes competencies for food and nutrition courses that is valid by home economics teachers and subject matter specialists. To further assist vocational food service training programs, short-term offering of courses in home economics is necessary.

Marketing strategies are useful to emphasize the aspects of other careers to current students. The level two students learn about nutrition in the food service training. However, the best marketing tools are guest speakers or a course in nutrition.

"Healthy People 2000" is a broad-based initiative that seeks to improve the health of all Americans over the next
decade. It is a set of objectives from the American Dietetic Association. Its objectives for the restaurants and institutional food service operations are to increase at least 90% of the restaurants to offer identifiable low-fat, low-calorie food choices, consistent with the Dietary Guidelines for Americans. Their goal for fast food and family restaurant chains is to add at least one low-fat, low-calorie item to their menu (Danford, Stephenson 1992).

Food service establishments have become more aware of the relationship between nutrition and health and consumes a number of meals away from home. There is a need for more nutrition information at the point of preparation. In a position statement adopted in January 1991, ADA supported food service operators in a continued development of healthful menu choices and methods to inform their workers of these choices (Bronner, 1994).

The food service students need to have skills in safety standards, first aid, substituting ingredients, adjusting recipes, and computing checks. The students need to have communication skills both oral and written, and some knowledge of creating menus. The level two students learn about nutrition science and entrepreneurship subjects. These courses require an understanding of more advanced math and science subjects.
The students favor hands-on work in the kitchen, however, students do better academically when the coursework precisely applies to the real world (Dykman, 1995).

Restaurant managers are responsible for training students on the job as well as having positive attitudes and good work ethics. Dykman agrees by stating that all the food service skills are essential, and her chief goals are good work ethics and a positive attitude.

The economic climate today calls for good leadership skills as a key to success in the food service industry as stated by Carey in an article entitled, "A Strategy for Developing a Program to Prepare Managers in Dietetics" (Carey, 1995). In the food service industry, whether it be in restaurant or health care, employees with leadership training produce a better quality of product or service. The idea of good leadership training identified this as a method to enhance food service operations. It can serve as criteria for evaluation of dietetic and food service training and serve as an instrument for evaluating the curriculum in the programs.

When producing curriculum, the functional measurement approach measures a person's development of a particular skill. This is an effective measurement of an individual's performance rather than by the norm or group. The performance is compared to an objective standard, with test
items often linked directly to specific instructional assessments (Falvey, 1989).

Falvey said these are statements that describe and define in specific and objective terms those skills within the student's repertoire that allow the student to participate in a wide variety of integrated curriculum.
DEFINITION OF TERMS

1. **Nutrition**: Study of foods and their relations to health.

2. **Daily food guide**: Guide that separates food into five nutritious groups to plan meals.

3. **Protein**: A nutrient which is needed to form muscle, bones, and blood.

4. **Carbohydrate**: A nutrient which is the best source of energy.

5. **Amino Acids**: Building blocks of protein.

6. **Cholesterol**: Class of fat which is related to saturated fat and heart disease.

7. **Diet**: Food and drink consumed each day.

8. **Fat**: A nutrient which supplies 9 calories as the same measure of carbohydrates.

9. **Saturated fat**: Fat which comes from a source such as butter, lard, meats, fish, and egg yolks.

10. **Essential fatty acid**: Type of fat which is essential to all cells and tissues of the body.

    Example: Linoleic acid

11. **Fat soluble vitamins**: Vitamins which are absorbed into the body along with food fats.

    Example: Vitamins A and D
12. **Mineral**: A nutrient which is needed for building, maintaining, and repairing the body and for regulating body processes.

13. **Starch**: Carbohydrate found in seeds, tubers, and roots where it functions as an energy source.

14. **Water soluble vitamins**: Vitamins which are easily lost through careless preparation of food.
   Examples: Vitamin C, Thiamin, Niacin

15. **Fiber**: Indigestible residue necessary for efficient elimination.
    (Note: This is also referred to as cellulose or roughage. Good sources of fiber are fruits and vegetables.)

16. **Calorie**: A unit measuring the amount of heat from any one food.

17. **Vitamin**: A nutrient which regulates the body processes and prevents specific diseases associated with the lack of any one vitamin.

18. **Nutrient**: Chemical compound found in food which is essential to good health.
CHAPTER THREE

Research Design

The research was based on a qualitative research approach. The plan was to select multiple sites. The population subjects were the instructors and high school students enrolled in the program. I used simple random sampling by selecting eight sites located within the high school and the other site at an adult school.

Methodology

This is a case study designed with a focus on a nutrition education theme to be taught in conjunction with curriculum of employment training in the preparation of food. The question is if the student is asked to prepare a nutritious meal, would they have the knowledge to accomplish this task? In an article entitled, Competency Profile for Food Production, Management, and Service, written by a panel of expert workers in the food industry, it states that there is a need for further instruction in the food service training program to include a lesson in nutrition. Nutrition is often overlooked as an important part of study in food service training. The instrumentation for this study consists research of existing programs and a questionnaire of topics that were of interest to the student.
and what the instructor thought would benefit the student. From the survey, lessons were developed from the topics most commonly selected. A hospitality conference was attended and executive chefs interviewed in regards to including a prior course in nutrition, which was viewed as necessary to their training. The chefs agreed and wanted more information about and special dietary preparations.

The units and lessons are geared towards the applications of nutrition for food service. They are arranged from general guidelines to more specific daily diets, then more specifically the nutritional component of each group.

**Procedures**

The nutrition lessons are brief yet informative. The outline is a guide to the sequence of study in nutrition. The definition of terms are most commonly used in nutrition education.

The process for integration of the recommended curriculum with the established food preparation curriculum is listed in (Appendix A).
CHAPTER FOUR

Summary

The potential exists for food service training expansion within its traditional boundaries. The emphasis upon strengthening the traditional vocational education delivery system, is to maximize the employability of the students.

The School-to-Work addresses the nation's need to build more highly skilled workers. It is concerned toward the development of an educational system that matches students educational attachment and corresponding skills to the job market expectations. There is a demand for higher levels of technical skills and related academic competencies. This curriculum is designed to move students from an entry-level of an educational system of training the next level of academic and technical skills training. This unit is designed to prepare students for future employment and further learning outcomes (Ford, 1994).

It is necessary to ensure the students a smooth transition from one of the levels of training into the next level of training and an opportunity for further educational outcomes. The need for highly skilled workers in food service and health care services is expected to increase. The 10 top jobs for the year 2000, projected a need for more workers in food preparation (Ford, 1994). The growing
healthcare professions and home health care food service workers, are going to need some education about nutrition and it's effect on our health.

The vocational food service training programs are avenues for personal growth and career advancement. The expanded unit of training may be a method to utilize their knowledge and skills in an effort to increase their responsibilities and tasks.

The goal of this project is to give students and workers an opportunity to learn about different careers and how they can use this training to lead them toward other careers in this field.

A nutrition component in the restaurant food service training engages students to explore other concepts, to analyze and solve real life problems.

Instructors would like to use the programs to guide their students towards future careers in the food service industry.

A nutrition course can be linked to other disciplines: for example, Culinary Arts can be linked to Business and Ethnic Studies, Food Service and Nutrition can be linked to Health Care and Sports Fitness Studies. Students studying nutrition in their food service training can proceed up a career ladder to various levels of employment. The restaurant training workers are considered entry-level 1A,
that enables a student to become employed. The level I B
workers lead to a Certificate Program, and the Level
II (technical) an AA/As Degree (Stanley, 1982.)

Recommendations

Recommendations for further research may be done on
the use and preventative maintenance of commercial
equipment, therapeutic diets, and management skills.
The topics listed below are taken from the Restaurant Occupation/Food Service training program of selected Regional Occupation Programs of California. The course is designed to prepare students for entry-level employment in the food service industry. My intent is to elaborate on those subjects and implement a course in Nutrition.

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<th>Units of Study</th>
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<td>A-2</td>
<td>E-1</td>
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</table>

* Note shaded area represents where the nutrition curriculum can be intergated
Appendix B Nutrition Curriculum Outline

Unit A  Meal Patterns of Various Cultures
Lesson 1. Foods and their influence on culture
Lesson 2. What's in a name.

Unit B  Fundamentals of Good Foods
Lesson 1. The Recommended Dietary Guidelines
Lesson 2. Vitamins and Minerals
Lesson 3. Carbohydrates
Lesson 4. Proteins

Unit C  Eating Better in America
Lesson 1. Ensure your food safety

Unit D  Math for Food Service Workers
Lesson 1. Measurements of volume and weight
Lesson 2. Liquid and dry Measurements
Lesson 3. Adjusting recipes

Unit E  Low Fat Cooking
Lesson 1. Modifying recipes for sugar, salt, fat and fiber
Lesson 2. Focus on fats

Unit F  Eating Better in America
Lesson 1. Daily food guide pyramid and food guide
Lesson 2. Creating healthier menus

Unit G  Occupations and Careers Related to Food Service and Nutrition
Lesson 1. Career Ladder
APPENDIX C NUTRITION CURRICULUM OVERVIEW

After the unit, the student should be able to complete worksheets concerning the nutrients and their functions and food sources. The student will be able to list the five food groups from the daily food guide pyramid. The student should be able to plan nutritionally sound balanced menus by using the daily dietary guidelines. This knowledge will be evidenced by correctly completing activities, test items, and class discussions.

Specific Objectives

After completion of this unit, the student should be able to:

I. Distinguish between foods of various cultures.

II. Perform an inspection on the cleanliness of the kitchen.

III. Check freezer and refrigerator for temperatures.

IV. Perform the correct procedures for measuring and weighing food items.

V. Adjust the recipes for more or fewer servings.

VI. List the seven dietary guidelines daily food guide.

VII. Identify the importance of proteins, carbohydrates and fats in the diet.

VIII. Identify the name of fats, sugar, and salt in processed foods.

IX. Match types of nutrients and their functions.

X. Suggest ways to incorporate nutrition in menus.

XI. Modify recipes to lower fat and sugar content.
Instructional Materials

1. Included in this unit:
   a. Information Sheet
   b. Assignment sheets
   c. Transparency Master-Career Ladder,
   d. Tests
   e. Answers to Tests
Appendix D UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: A  Topic: Meal Patterns of Various Cultures
Lesson 1: Foods and Their Influence Time: 30 minutes on Culture

Objective
The student will be able to recognize that certain cultures have influences on the foods they eat.

1) Instructional Objectives
The student will:
a. Match foods such as pizza, pasta, smorgasbord, pita, and boiled foods to the culture it came from.
b. Given a list of cultures: French, Chinese, Mexican, Italian, German and Scandinavian, the students will match the foods to the cultures listed.

2) Assignment
Complete Test Item Sheet.

3) Procedure
a. Explain what each food item is.
b. Explain the given cultures.
c. Have students work in groups to complete assignment

4) Instructional Materials
Chalkboard

5) Evaluations
Students performance on Test Items
**Test Items:**

Match the culture to its known food product. Cultures may be used more than once.

<table>
<thead>
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<th>Cultures</th>
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<td>c  1. boiled foods</td>
<td>a. French</td>
</tr>
<tr>
<td>e  2. pickled/sweet and sour</td>
<td>b. Chinese</td>
</tr>
<tr>
<td>g  3. ice cream/flavored ices</td>
<td>c. British</td>
</tr>
<tr>
<td>f  4. smorgasbord</td>
<td>d. Greek</td>
</tr>
<tr>
<td>g  5. pizza</td>
<td>e. German</td>
</tr>
<tr>
<td>d  6. pita (pocket bread)</td>
<td>f. Scandinavian</td>
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<tr>
<td>g  7. Pastas</td>
<td>g. Italian</td>
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</tbody>
</table>

(Note * represents correct response)
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: A Topic: The Fundamentals of Good Food
What's in a Name? Time: 2 hours
Lesson: 2

Objective
The student will be able to differentiate the names of fats, sugars, and salt listed on processed foods.

1) Instructional Objectives
The student will:
a. Recognize what the ingredients are in processed foods.
b. Recognize the other names for fats, sugars, and sodium.
c. Choose between a good or bad margarine.

2) Assignment
Complete fill in the blank on "What's in a Name?" handout.

3) Procedure
a. Explain that there are many other ingredients added to convenience or packaged foods.
b. Read the "What's in a Name?" handout to students.
c. Discuss the products that have been shown to cause an increased risk of heart disease.

4) Instructional Materials
Food labels from margarine, low fat margarines, cereal boxes and soup labels.

5) Evaluations
Students will participate in class discussion, fill blank questions on "What's in a Name?"
What's in a Name?

More than one-half of the foods we eat are packaged and processed. Learning to read and understand labels is an important part of improving our diets. Many convenience and snack foods contain large amounts of saturated fats, cholesterol, sugars and sodium. Also, their costs may be far too high for the vitamins and minerals they give in return.

By reading the labels of processed foods, you can determine which are acceptable. Often, the food manufacturer will list ingredients in words other than fat, sugar, or salt. The following lists give other names for these items, or those that are high in them.

<table>
<thead>
<tr>
<th>SUGAR</th>
<th>FAT</th>
<th>SODIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fructose</td>
<td>Mono-glycerides</td>
<td>Salt</td>
</tr>
<tr>
<td>Sucrose</td>
<td>Di-glycerides</td>
<td>Baking Soda</td>
</tr>
<tr>
<td>Lactose</td>
<td>Glycerol Esters</td>
<td>Baking Powder</td>
</tr>
<tr>
<td>Maltose</td>
<td>Shortening</td>
<td>Monosodium Glutamate</td>
</tr>
<tr>
<td>Dextrose</td>
<td>Hydrogenated Oils</td>
<td>Brine</td>
</tr>
<tr>
<td>Honey</td>
<td></td>
<td>Sodium Propionate</td>
</tr>
<tr>
<td>Syrups</td>
<td></td>
<td>Sodium Benzoate</td>
</tr>
<tr>
<td>Molasses</td>
<td></td>
<td>Sodium Caseinate</td>
</tr>
<tr>
<td>Sweeteners</td>
<td></td>
<td>Sodium Phosphates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disodium Inosinate</td>
</tr>
</tbody>
</table>

USE SPARINGLY OR AVOID PRODUCTS WHICH LIST ANIMAL, HYDROGENATED, OR SATURATED FATS AS THEIR MAJOR INGREDIENTS.

THESE PRODUCTS HAVE BEEN SHOWN TO INCREASE THE RISK OF HEART DISEASE.

FOR EXAMPLE:
The following is an ingredient list from a margarine that would be a ________ choice?
Deodorized Lard, Partially Hydrogenated Lard with BHA & BHT added, Water, Liquid Soybean Oil...etc.
OR...
Hydrogenated Vegetable Oil, Liquid Vegetable Oil...

The following margarine would be a ________ choice?
Liquid Soybean (or Corn, Sunflower, or Safflower) Oil, Partially Hydrogenated Oil, Water, etc....

REMEMBER...Ingredients are listed in order of amounts in the product. The largest is listed first down to the smallest amount.
UNIT AND DAILY LESSON PLANS

Unit Topic: Nutrition Fundamentals of Good Food
Unit: B Lessons: 1, 2, 3, 4
Unit Duration: 3 sessions - 30 minutes

Introduction:
The purpose of this unit is to acquaint the students with the proteins, carbohydrates, vitamins, and minerals.

1) Instructional Objectives
Upon completion of this unit, the student will:
   a. State the seven dietary guidelines.
   b. Explain what the guidelines are for.
   c. Identify the functions and food sources of vitamins and minerals.
   d. Recognize the importance of proteins in the diet.
   e. Recognize the importance of carbohydrates in the diet and food sources.

2) Unit Content
   a. Introduce students to the needs of vitamins and minerals in the diet.
   b. Explain the significance of carbohydrates and carbohydrate-rich food sources.
   c. Explain the major function of proteins.

3) Procedures and Activities
   a. Discuss methods to protect vitamins in foods.
   b. Write the 2 categories of carbohydrate foods on the board. Discuss from the "Focus on Carbohydrates" information sheet other concepts such as simple and complex carbohydrates.
   c. Have students calculate their protein need by using the formula on "Focus on Protein" information sheet.
   d. Complete "How's Your Salt Sense" handout.
   e. Complete "Compute Your Nutrition Condition."

4) Instructional Aid and Resources
Calculators.

5) Evaluation
Students answers and completion of worksheets and calculation of protein needs, and discussion of activities sheets.
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: 8  Topic: The Fundamentals of Good Food
Lesson 1: Recommended Dietary Guidelines  Time: 30 minutes

Objective
The purpose of the lesson is to acquaint the students about what they need to stay healthy.

1. Instructional Objectives
   The student will:
   a. Identify the seven dietary guidelines.
   b. Recognize these guidelines are for healthy individuals.
   c. Recognize these guidelines are essentials in buying and preparing foods today.

2. Assignment
   The student will complete "Compute Your Nutrition Condition" worksheet.

3. Procedure
   a. Present a lecture on Dietary Guidelines for Americans.
   b. List the seven guidelines on the chalkboard.
   c. Emphasize that these are only guidelines we should follow.
   d. Answer questions.

4. Instructional Materials
   Student assignment sheet.

5. Evaluation
   Students completion of student assignment, with possible suggestions for improvements.
INFORMATION SHEET

Dietary Guidelines:

What should Americans eat to stay healthy? These guidelines help to answer these questions. They are advice for healthy Americans, ages 2 years and over. These guidelines are not for younger children and infants, whose dietary needs differ.

Many American diets have too many calories and too much fat (specifically, saturated fat), cholesterol, and sodium. Such diets are one cause of America's high rates of obesity and of certain diseases - heart disease, high blood pressure, stroke, diabetes, and some forms of cancer. Good health also depends on your heredity, your environment, and the health care you get. Your lifestyle is also important to health - how much you exercise, and whether or not you smoke, drink alcoholic beverages to excess, or abuse drugs, for example.

* Eat a variety of foods.
* Maintain a healthy weight.
* Choose a diet low in fat, saturated fat, and cholesterol.
* Choose a diet with plenty of vegetables, fruits, and grain products.
* Use sugars only in moderation.
* Use salt and sodium only in moderation.

If you drink alcoholic beverages, do so in moderation.
### COMPUTE YOUR NUTRITION CONDITION

<table>
<thead>
<tr>
<th>DO YOU:</th>
<th>RARELY</th>
<th>SOMETIMES</th>
<th>OFTEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participate in regular physical activity</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Choose foods from the Milk Group</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Eat breakfast</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Drink carbonated beverages</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Eat raw fruits and vegetables</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Use foot power instead of horse power</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Eat candy</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Salt your food</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Choose whole grain cereal or bread</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Maintain ideal weight</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Eat fried foods</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Skip meals</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Try new sports</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Binge/overeat</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Avoid unfamiliar foods</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Drink water</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Eat processed snack foods</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Try fad diets</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Eat a variety of protein foods</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Get adequate sleep</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

**Score:**

- 80 or above________you're a winner
- 70-80________you're in the running
- below 70________try harder
Daily Lesson Plan

Unit: B  Topic: Fundamentals of Good Food
Lesson 2: Focus on Vitamins and Minerals  Time: 30 minutes

Objective
The student will recognize the various vitamins and minerals and their food sources.

1) Instructional Objectives
The student will:
   a. Recognize methods to protect vitamins in food.
   b. Recognize the functions of vitamins.
   c. Recognize the nutritional needs for vitamins.

2) Assignment
   Complete etc.

3) Procedure
   a. Explain that vitamins keep our bodies healthy.
   b. Handout a "Good Food Sources of Vitamins and Minerals" sheet.
   c. List methods to protect vitamins in foods.
   d. Explain the difference between water-soluble and fat-soluble vitamins.

4) Instructional Materials
   Chalkboard, Handout

5) Evaluations
   Students will list water-soluble and fat-soluble vitamins.
FOCUS ON VITAMINS

Vitamins regulate all chemical reactions in the body and keep our bodies functioning properly. They do not provide energy (calories). Our bodies cannot manufacture vitamins so they must come from the foods we eat. We need only small amounts of all vitamins yet each vitamin has certain functions to perform. Thought advertisements may suggest that vitamins provide energy, improve performance, or increase endurance, they do not!

Our bodies need at least 15 different vitamins. Some we need everyday. These are the water soluble vitamins - B complex and C. Some vitamins we need every other day. Vitamins A, D, E, and K are fat-soluble and are stored in the fatty tissue of the body. Too much of these are dangerous as the body may develop toxic levels.

No one food contains all the vitamins needed for health and growth. Many of today's foods are fortified with vitamins and minerals. Fortified means more nutrients are added to the food than existed originally.

To protect the vitamin in the food:
1. Store and cook food correctly.
2. Eat whole grain cereals and breads.
3. Eat fresh fruits and vegetables - the more processing, the more loss of nutrients.
4. If cooking, use minimal amounts of water.

Adequate amounts of vitamins are in the varied diet. Certain physical conditions such as pregnancy, illness, alcoholism, and smoking may require more vitamins. A multivitamin pill may be advisable if the athlete does not have regular meals. If vitamin and mineral supplements are used, a single daily multivitamin with 100% of the RDA for each nutrient is the best.
# Good Food Sources of Vitamins and Minerals

<table>
<thead>
<tr>
<th>Vitamins and Minerals</th>
<th>Function</th>
<th>Food Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>Helps create good eyesight</td>
<td>Whole milk, butter, margarine, egg yolk</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>Not completely understood, creates healthy blood</td>
<td>Plant products, leafy green vegetables, whole grain cereals, liver</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>Builds strong blood vessels, helps in absorption of iron</td>
<td>Citrus fruits, broccoli, tomatoes</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>Helps in blood clotting</td>
<td>Spinach, cabbage, cauliflower</td>
</tr>
<tr>
<td>Thiamin</td>
<td>Prevents beriberi</td>
<td>Wheat germ, Brewer's yeast, pecans, pork roast</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>Promotes good skin and healthy mouth and lips</td>
<td>Liver, cheese, eggs</td>
</tr>
<tr>
<td>Niacin</td>
<td>Prevents pellagra, promotes healthy skin and GI tract</td>
<td>Peanut butter, tuna fish, chicken, peas</td>
</tr>
</tbody>
</table>

**B Vitamins**

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Function</th>
<th>Food Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folacin</td>
<td>Promotes healthy blood cells</td>
<td>Liver, lettuce, green vegetables</td>
</tr>
<tr>
<td>B₆</td>
<td>Promotes healthy skin and blood</td>
<td>Apples, apricots, bananas</td>
</tr>
<tr>
<td>B₁₂</td>
<td>Promotes healthy blood and bones</td>
<td>Cereal grains, fish, eggs</td>
</tr>
</tbody>
</table>

**Minerals**

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Function</th>
<th>Food Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>Promotes healthy blood and muscles</td>
<td>Liver, meat, egg yolks</td>
</tr>
<tr>
<td>Calcium</td>
<td>Helps build strong bones and teeth</td>
<td>Cheese, milk, ice cream</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Builds strong bones and muscles</td>
<td>Leafy green vegetables, nuts, soybeans, snails</td>
</tr>
<tr>
<td>Zinc</td>
<td>Promotes growth, healthy hair</td>
<td>Meat, poultry, cheese, milk, peanut butter</td>
</tr>
<tr>
<td>Manganese</td>
<td>Promotes blood clotting and healthy hair</td>
<td>Cocoa, bran flakes, oatmeal</td>
</tr>
<tr>
<td>Iodine</td>
<td>Prevents goiters</td>
<td>Seafood, iodized salt, seaweed</td>
</tr>
<tr>
<td>Fluoride</td>
<td>Prevents cavities</td>
<td>Water</td>
</tr>
</tbody>
</table>
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: B Topic: Fundamentals of Good Food
Lesson 3: Focus on Carbohydrates Time: 30 minutes

Objective
The purpose of this unit is to introduce the student to carbohydrates and the food sources.

1) Instructional Objectives
The student will:
a. Recognize the need for carbohydrate in our diets.
b. List the carbohydrate-rich foods on the student information sheet.
c. Have students give examples of carbohydrate-rich foods on a separate piece of paper.

2) Assignment
Complete etc.

3) Procedure
a. Prepare a lecture on carbohydrates from the sheet.
b. List examples of carbohydrate foods: for example, Breads (muffins); Noodles and pasta (spaghetti)
c. Emphasize the two sources of carbohydrates, Starches and Sugars.

4) Instructional Materials
Chalkboard

5) Evaluations
FOCUS ON CARBOHYDRATES

We need carbohydrates because they supply quick and efficient energy. It is the body's main fuel source supplying 4 calories per gram. Most carbohydrates come from plant foods. If our body does not have enough carbohydrates it turns to protein and fat for energy. By having enough carbohydrates, protein is spared, and used for building and repairing body tissue. Carbohydrate foods also contain vitamins, minerals and fiber. No Recommended Daily Allowances are set for carbohydrates.

Carbohydrate-rich foods are:

<table>
<thead>
<tr>
<th>Starches</th>
<th>Sugars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breads</td>
<td>Fruits like plums and apples</td>
</tr>
<tr>
<td>Cereals</td>
<td>Vegetables like sweet potatoes and tomatoes</td>
</tr>
<tr>
<td>Rice</td>
<td>Honey, molasses and sugar</td>
</tr>
<tr>
<td>Beans</td>
<td>Milk</td>
</tr>
<tr>
<td></td>
<td>and potatoes</td>
</tr>
</tbody>
</table>

Simple carbohydrates are easy to digest and converted rapidly into blood sugar glucose. Simple carbohydrates are one and two sugar units. Monosaccharide, 1 sugar molecule, is glucose, galactose, and fructose. Disaccharide, two sugars, molecules are lactose, sucrose, and maltose. Glucose is used by the body cells to provide energy.

Complex carbohydrates are digested and broken down into glucose at a slower rate. Complex carbohydrates are formed by combining any simple carbohydrate together. Complex Carbohydrates are starches and dietary fiber. Dietary fiber is also known as cellulose and roughage and it's major job is to increase mobility of the foods being digested. Fiber is not digested and passes through the body unchanged.

Our body uses carbohydrates for energy and stores a small amount in the liver and muscle as glycogen. When muscles work, glycogen is burned. Excess carbohydrates in the diet are converted to and stored as fat.

Low carbohydrate diets cause the body to experience fatigue, dehydration, and loss of energy.

We need carbohydrates to provide calories for energy. Athletes need a carbohydrate-rich diet to fuel hard working muscles. Exercise increases our need for calories.

Carbohydrate-rich foods provide vitamins, minerals, and fiber needed for health and are generally less expensive.
than protein-rich foods. It is recommended that at least 50% of calories come from carbohydrates in the diet.

Carbohydrates have received a bad reputation as "low-prestige" foods and fattening items. Since the beginning of the century, Americans have cut back on flour, cereal grains and potatoes. These are all complex carbohydrates with high nutritional value. Remember, the potato has only 100 calories and a tablespoon of butter or margarine has 100 calories. Remember foods aren't fattening unless you consume more calories than your body can use.

As the nineteenth century progressed, Americans have increased their intake of simple carbohydrates, foods high in calories and low in nutrients. Among these simple carbohydrates are sugar-coated cereals, cakes, cookies and soft drinks.

Carbohydrates also contribute to tooth decay. Sucrose, plain table sugar, is the favorite carbohydrate of bacteria that live in your mouth. They eat the sugar and turn it into acid. The longer the acid stays on your teeth, the more damage it does to the enamel and eventually a cavity will form. Sticky foods like caramels, taffy, and raisins are the hardest on teeth. Rinse or brush your teeth after eating them.
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: B  Topic: Fundamentals of Good Foods
Lesson 4: Focus on Proteins  Time: 30 minutes

Objective
The purpose of this unit is to introduce students to proteins, the needs and sources.

1) Instructional Objectives
The student will:
   a. Identify the functions of proteins.
   b. List good sources of proteins.
   c. Distinguish between animal and plant protein.

2) Assignment
   Calculate your protein need from the formula.

3) Procedure
   a. Explain the need of proteins as related to health.
   b. Explain the amount of servings we need daily.
   c. Give students formula for calculating their needs based on the formula.
   d. Answer questions of selected students.

4) Instructional Materials

5) Evaluations
   Successful completion of calculating your protein needs.
FOCUS ON PROTEIN

Our bodies are made up of 18-20% protein by weight. Our muscles are 22% protein and 70% water.

The major functions of protein are:
1. Protein provides amino acids which are the building blocks of the body. Amino acids build the body structure and repair body tissues that break down into amino acids which are then absorbed into the bloodstream. Our body needs 20-22 different amino acids. Our body makes 12-14 and 8 must be obtained from the food we eat.
2. Protein helps the body build antibodies which fight infections.
3. Hormones and enzymes are made of protein. They coordinate and regulate body functions and neuromuscular functions.

* A protein food that contains all the essential amino acids is called a complete protein. As a general rule, most animal foods such as meat, milk, poultry, eggs, seafood, fish and soybeans contain complete proteins. As a general rule, most plant protein carries different amino acids than animal foods and must be combined with another food to provide essential proteins, the 8 amino acids we need outside our body.

* Good sources of plant protein are peanut butter, nuts, bread, cereal, rice, grains, pasta and beans. Many international foods combine plant protein to make complete proteins. Italians combine pasta and cheese. Mexicans combine tortillas and refried beans. Orientals combine meat and rice. American favorites are cereal and milk, and peanut butter and bread.

* How much protein do we need each day? We need 2 servings as suggested by the Basic 4 food groups. One serving of 2 oz. of meat, fish or poultry, ½ cup baked beans, or one egg, or 1 oz. cheese, or 2 rounded teaspoons of peanut butter.

* The Dietary Guideline suggests we have 10-15% of our calories from protein. Presently Americans are eating two times the protein our bodies need. This is an expensive source of calories. We need a continual supply of protein throughout the day in order to have all the amino acids our bodies need.
Yet excess protein is stored as body fat. Excess protein also takes more water to break down (metabolize) and therefore causes your kidneys to work harder.

* Protein supplements are expensive and unnecessary.

* Exercise increases our need for carbohydrates but not for protein.

* High protein diets stress the body. The liver is forced to work harder to digest protein. The kidneys are strained due to more fluids.

The Challenge:

* Calculate your protein needs by:

1. Convert your weight to kilograms (1 kilogram = 2.2 pounds of body weight)
   Example: 154 lbs. ÷ 2.2 = 70 kilograms.

2. The body needs .8 gm per kilogram of body weight.
   Example: .8 X 70 = 56 grams
   Answer: 154 pound person needs 56 grams of protein each day.

3. Add up grams of protein in foods and you'll find how quickly you reach your RDA of 45 grams.

How many grams of protein does a 200 pound person need?
How much does a 110 pounder need?
Unit and Daily Lesson Plan

Unit Topic: **Nutrition Eating Better in America**

Unit: 3 Lessons: 1

Unit Duration: 30 minutes

Objective
The student will perform regular kitchen inspections of the restaurant where they do the training.

1) Instructional Objectives
The student will:
   a. Inspect their kitchen by using the “Kitchen Survey” sheet.
   b. Identify the proper storage temperatures of the refrigerators and freezer.
   c. Specify the general appearance of the kitchen.

2) Unit Content
   a. Introduce the importance of maintaining a clean kitchen.
   b. Explain that it is a way to protect food from contamination.
   c. Identify if food is stored properly.

3) Procedures and Activities
   a. Distribute “Kitchen Survey Sheet”.
   b. Prepare a short lecture on sanitation and safety.
   c. Explain the importance of proper storage, in preventing food contamination and food waste.

4) Instructional Aid and Resources
   Calibrated meat thermometer

5) Evaluation
   The student is evaluated by a completed kitchen survey.
Unit and Daily Lesson Plan

Daily Lesson Plan

Unit: C  Topic: Eating Better in America
Lesson 1: Ensure Your Foods Safety  Time: 30 minutes

Objective
The student will perform regular kitchen inspections of the restaurant where they do the training.

1) Instructional Objectives
The student will:
   a. Use the "Kitchen Survey" Sheet to rate the general cleanliness.
   b. Survey the kitchen for proper handling and storage of meat products.
   c. Read the freezer and refrigerator thermometers.
   d. Add bonus points to the score if it applies to their facility.
   e. Conduct the surveys once a week.

2) Assignment
Complete "Kitchen Survey."

3) Procedure
   a. Give each student a survey sheet.
   b. Explain how the sheets are to be scored.
   c. Have students add up the scores for the kitchen.
   d. Tell students if they have a calibrated meat thermometer; if so, then read the temperature and add the bonus points.

4) Instructional Materials
   "Kitchen Survey" Sheets; calibrated meat thermometers.

5) Evaluations
   Review of the "Kitchen Survey."
Kitchen Survey

Using the following format and key, survey your kitchen or someone else's for general cleanliness and proper handling and storage of meat products. A total of 55 points is possible with the bonus. Refer to the score guide at the bottom of the page to see where your kitchen rates.

### Cleanliness in the kitchen

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting boards, wooden or plastic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can opener</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garbage can</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garbage disposal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knives/cutting utensils</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Refrigerator - meat covered/wrapped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freezer - meat covered/wrapped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freezer - meat wrapped properly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General appearance of kitchen</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Key: 1 = filthy  2 = marginal  3 = adequate  4 = clean  5 = white glove clean

### Temperatures*

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freezer</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*An average of five temperatures taken at random areas within the freezer and five within the refrigerator. Leave thermometer in place for at least 1 minute to obtain an accurate reading.

**KEY:**

- Refrigerator: 1=44° 2=42° 3=40° 4=36° 5=34°
- Freezer: 1=10° 2=8° 3=6° 4=4° 5=2°

**BONUS:** If you have a calibrated meat thermometer
- +/- 1° - 5 points extra
- +/- 2° - 3 points extra

If you do not have a meat thermometer, subtract 2 points.

**SCORE:**

* 45 to 50+ points - Excellent, you pass the white-glove test.
* 40 to 45 points - Good, but conditions could be improved.
* 35 to 40 points - Fair, please clean up your act.
* 34 or below - Don't invite me over for supper. Sorry!
Unit and Daily Lesson Plan

Unit Topic: Math for Food Service Workers
Unit: D Lessons: 1, 2, 3
Unit Duration: 3 - 30 minute lessons

Objective
The purpose of this unit is to introduce the correct method of measurements and volume when weighing food products.

1) Instructional Objectives
Upon completion of this unit, the student will:

a. Correctly measure liquids
b. Correctly measure meat and potatoes
c. Calculate metric measurements
d. Demonstrate their ability to convert liquid measurements.
e. Identify a scale.
f. Calculate the adjustment of recipes.

2) Unit Content
a. Introduction to dry and liquid measures.
b. Introduction to cups, pints and gallon measures.
c. Practice applications in converting units of measurements.
d. Group review for correctness.
e. Calculate from the student information sheet, to adjust recipes for more or less.

3) Procedures and Activities
a. Give a short lecture and review the student information sheet.
b. Have students complete worksheets 1 and 2.
c. Show students a scale and how to use it correctly.
d. Lead class discussion of the correct answers.

4) Instructional Aid and Resources
A scale and glass measuring cups.

5) Evaluation
Student answers to worksheets 1 and 2.
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit:  D  Topic:  Math for Food Service
Lesson 1:  Measurements of Volume and Weight  Time:  30 minutes

Objective
The student will differentiate between liquid and dry measures.

1) Instructional Objectives
The student will:
   a. Calculate the liquid measures from cups to pints, ounces to cups, pints to ounces, quarts to pints, and fluid ounces to pints.
   b. Calculate dry measures from pints to quarts, quarts to pints, pints to ounces, ounces to pounds.
   c. Complete worksheet 1 and 2

2) Assignment
Complete worksheet 1 and 2.

3) Procedure
   a. Distribute student information sheets.
   b. Discuss student information sheets with the class.
   c. Have students complete assignments in class.
   d. Answer questions of selected students.

4) Instructional Materials
Cooking scales, and glass measuring cups to show the student the equipment and utensils.

5) Evaluations
Students performance on the worksheets.
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: D Topic: Math for Food Service Occupations
Lesson 2: Liquid and Dry Measures Time: 30 minutes

Objective
The student differentiates between the correct methods of measuring liquid and dry volumes in customary units.

1) Instructional Objectives
The student will:
a. Convert the liquid measures into smaller or larger liquid measures.
b. Calculate dry measures into large units of dry measures.
c.

2) Assignment
Complete Worksheets #1 and #2

3) Procedure
a. Distribute information sheets and clarify the information.
b. Discuss the procedures for calculating the measurement.
c. Answer questions of selected students or students can work in a group.

4) Instructional Materials
Calculators

5) Evaluations
Completion of Worksheet #1 and #1; review answers.
Student Information

Tables of Household Measures

Liquid Measure:

1 cup = 8 fluid ounces
1 pint = 16 fluid ounces
1 quart = 2 pints = 32 fluid ounces

Dry Measure:

1 pint = 2 cups
1 quart = 2 pints
3 tsp. = 1 Tbsp
16 Tbsp = 1 cup

Standard Weight:

1 pound = 16 ounces
12 = 1 dozen (doz.)
STUDENT INFORMATION

Metric Measurement:

Mass:

1000 milligrams = 1 gram
1000 grams = 1 kilogram

10 grams = 1 dekagram
10 dekagrams = 1 kilogram

Volume:

milliliters = 1 liter

1000 liters = 1 kiloliter
These are the measurements that you will need to measure liquids. Liquids are measured by the cup, pint, quart and

This is a one cup (c) measure.

2 cups (c) make 1 pint (pt).
(2 c = 1 pt)

1 pt.

1 c.

4 cups (c) make 1 quart (qt.)
(4 c = 1 qt)

1 gal.

16 cups (c) make 1 gallon (gal).
(16 c = 1 gal)
This cup measure is also an ounce measure.

1 cup is the same as 8 ounces

<table>
<thead>
<tr>
<th>Ounces</th>
<th>Cups</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 oz</td>
<td>1 cup</td>
</tr>
<tr>
<td>6 oz</td>
<td>3/4 cup</td>
</tr>
<tr>
<td>4 oz</td>
<td>1/2 cup</td>
</tr>
<tr>
<td>2 oz</td>
<td>1/4 cup</td>
</tr>
</tbody>
</table>

This cup has 1/2 cup or 4 ounces of liquid in it.
WORKSHEET 1

Put an x by the 1/2 mark

Put 4 cups - have student identify:

1/4 cup

1 cup

4 oz.

8 oz.
Some foods are measured by pounds (lb) and ounces (oz), such as butter, meat and potatoes. Pounds (lb) and ounces (oz) are measured on a scale.

This is a scale.

This butter weighs 16 ounces (oz) or 1 pound (lb)
So, 16 oz ___ lb.
WORKSHEET 2

LIQUID AND DRY VOLUME IN CUSTOMARY UNITS

LIQUID MEASURE

1. 16 cups = ____________pints
2. 32 ounces = ____________cups
3. 7 pints = ____________ounces
4. 6 quarts = ____________pints
5. 40 fluid ounces = ____________pints

DRY MEASURE

6. 1 pint = ____________quart
7. 1/2 quart = ____________pint
8. 1 pint = ____________ounces
9. 64 ounces = ____________pounds
Daily Lesson Plan

Unit: D  Topic: Math for Food Service Occupations
Lesson 3: Adjusting Recipes  Time: 30 minutes

Objective
The student will adjust recipes for quantities for more or less servings.

1) Instructional Objectives
The student will:
   a. Calculate the recipes for more or less servings
   b. Calculate recipe servings given the amount of servings.
   c. Solve the given vs. needed amounts of ingredients in a potato salad recipe.

2) Assignment
   Complete "Adjusting Recipes" Worksheet #1.

3) Procedure
   a. Distribute "Adjusting Recipes" Information Sheet #2
   b. Discuss the procedures for calculations.
   c. Answer questions of selected students.

4) Instructional Materials
   Calculators

5) Evaluations
   Completion of Worksheet #1, review answers.
ADJUSTING RECIPES
WORKSHEET #1

The following recipe will make 50 servings.

1. Adjust recipe to make 100 servings.
2. Adjust the recipe to make 25 servings.

### Potato Salad

Yield: 50 servings

- 7 lbs. potatoes, cooked, diced (112 oz.)
- 12 oz. celery, diced
- 3 oz. onions, minced
- 4 eggs, hard boiled, diced
- 1/2 c sweet relish
- 3 c mayonnaise
- 1/4 c vinegar (1 oz = 2 Tbsp) (1/4 cup = 2 oz.)
- 1 Tbsp salt (3 tsp. = 1 Tbsp)

<table>
<thead>
<tr>
<th>50/ 100.00</th>
<th>yield: 100 servings</th>
<th>50/ 25.00</th>
<th>yield: 25 servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ lbs. potatoes</td>
<td>_____ lbs. potatoes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ oz. celery</td>
<td>_____ oz. celery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ oz. onions</td>
<td>_____ oz. onions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ eggs</td>
<td>_____ eggs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ c. sweet relish</td>
<td>_____ c. sweet relish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ c. mayonnaise</td>
<td>_____ c. mayonnaise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ c. vinegar</td>
<td>_____ c. vinegar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ tsp. salt</td>
<td>_____ tsp. salt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Adjusting Recipes

**Information Sheet 2**

**How to adjust a recipe for more or less**

The recipe will serve 100 but you need 250 servings:

\[
\frac{250}{100} = 2.50
\]

This procedure has given you one number that both the given and the needed to have in common – now we simply multiply the number times all of the listed ingredients.

#### Example:

<table>
<thead>
<tr>
<th>Given</th>
<th>Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipe to serve 100</td>
<td>Recipe to serve 250</td>
</tr>
<tr>
<td>100 eggs</td>
<td>250 eggs</td>
</tr>
<tr>
<td>1 c. milk</td>
<td>2.5 (2 1/2) c. milk</td>
</tr>
<tr>
<td>2 tsp. salt</td>
<td>5 tsp. salt</td>
</tr>
<tr>
<td>1/2 c. oil (.50)</td>
<td>1 1/4 c. oil</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
100 \times 2.50 &= 250 \\
1 \times 2.50 &= 2.5 (2 1/2) \\
2 \times 2.50 &= 5 \\
1/2 \times 2.50 (1.25) &= 1 1/4
\end{align*}
\]
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit:  E  Topic:  Low Fat Cooking
Lesson 1:  Modified Recipes for Reduced Time:  1 hour
Sugar and Fat and Fiber

Objective
The student will prepare a recipe to modify the ingredients for a healthier food product.

1) Instructional Objectives
a. Identify methods to modify most breads, quick breads, cookies and bars.
b. Limit salt and sugars in recipes.
c. Increase fiber content by replacing wheat flour instead of white flour.

2) Assignment
Complete "Famous Oatmeal Cookie" recipes.

3) Procedure
a. Explain the recipes.
b. Instruct one group of students to prepare original "Famous Oatmeal Cookie" recipe.
c. Instruct the other group to prepare modified version of "Famous Oatmeal Cookie."
d. After both recipes are done, conduct a test for appearance and taste.

4) Instructional Materials
Shortening, brown sugar, white sugar, eggs, water, vanilla, oats, flour, salt and soda, raisins, chopped nuts, whole wheat flour, unbleached white flour, baking sheets, utensils, mixer.

5) Evaluations
Student write-up on the cookie recipes, likes and dislikes.
MODIFYING RECIPES FOR SUGAR, SALT, FAT AND FIBER CONTENT

GUIDELINES FOR RECIPE MODIFICATION:

1. Appropriate for most yeast breads, quick breads, cookies, & bars.
2. Decrease shortening or oil by up to 1/4 of the total amount in the original recipe.
3. Decrease sugar by up to 1/3 of the total amount in the original recipe.
4. Replace up to 1/3 of the flour with whole wheat flour (affects texture, so modify according to personal preference.)
5. Reduce 1/2 of all of the salt (not appropriate for yeast breads.)

EXAMPLE: OATMEAL COOKIES

ORIGINAL QUAKER OATS
"FAMOUS OATMEAL COOKIE"

MODIFIED OATMEAL COOKIE
REDUCED SUGAR AND FAT

INGREDIENTS:

3/4 cup shortening
1 cup brown sugar, packed
1/2 cup white sugar
1 egg
1/4 cup water
1 tsp. vanilla
3 cups oats, uncooked
1 cup white flour
1 tsp. salt
1/2 tsp. soda

2/3 cup shortening
1 cup brown sugar, packed
omitted
1 egg
1/4 cup water
1 tsp. vanilla
1 cups rolled oats, uncooked
1/2 cup unbleached white flour
1/2 tsp. salt
1/2 tsp. soda.
1/2 to 1 cup raisins
1/2 to 1 cup chopped nuts

METHOD FOR MODIFIED RECIPE:

1. Combine shortening, sugar and egg, beat well until smooth and creamy, about 1 minute with mixer.
2. Add remaining ingredients, blend well. Drop by spoonfuls onto oiled baking sheet.

YIELD: approximately 3 dozen.
Daily Lesson Plan

Unit:   E  Topic:  Nutrition/Low Fat Cooking
Lesson 2:  Focus on Fats  Time:  30 minutes

Objective
The student will be able to identify the role fats play in our diet.

1) Instructional Objectives
The student will:
a. Identify the three types of fatty acids.
b. Describe the function of fats in our diet.
c. Describe the function of fats in the body.

2) Assignment
Complete "Fats of Life."

3) Procedure
a. Describe fats and their functions in our diet.
b. List the 3 types of fatty acids.
c. Explain the effects of overconsumption.
d. Pass around an empty contain of tuna, pot pie, McDLT, French fries with teaspoons of shortening (like Crisco) in them; use level plastic teaspoons to measure the amount of fat in each food.

4) Instructional Materials
Crisco, plastic teaspoons, empty containers of tuna, pot pie, McDLT, TV Dinner.

5) Evaluations
Student's performance and discussion of "Fats of Life."
FOCUS ON FATS

• Describe the functions of fat in the body:
  1. Concentrated energy source, 9 calories per gram. All body cells contain some fat.
  2. Insulation - one half the body fat is below the skin and protects the body from changes in temperature.
  3. Protection of vital organs like the kidney, heart, and reproductive organs.

• Describe the functions of fat in the diet:
  1. Source of essential fatty acids and vitamins A, D, E, and K. Nutritional needs for fat are one tablespoon per day.
  2. Enhance food flavor and texture.
  3. Produce feelings of fullness and reduce hunger between meals.

• Identify types of fatty acids.
  1. Saturated - usually from animal origins, but not always!
     Includes lard, meat, cream, whole milk and cheeses, butter, eggs, solid margarines, palm oil and coconut oil.
  2. Mono-unsaturated - found in both plant and animal fat.
     Includes olive oil, peanut oil, some margarines and vegetable shortenings.
  3. Polyunsaturated - usually from plant origins. These tend to lower blood cholesterol levels. Includes safflower, sunflower, corn, soybean, and cottonseed oils.

• America's fat consumption is rising. In 1910, 32% of the calories were from fat. In 1975, 45% of the calories were from fat. US. Dietary Guidelines recommend fat consumption should be decreased to less than 30% of daily calorie intake.

• Dietary diseases related to overconsumption of fats include stroke and heart disease. Cholesterol is a waxy substance found in animal foods. Our bodies also make cholesterol and it is an important part of every body cell. Cholesterol becomes a problem when cholesterol-filled plaques develop on artery walls. This plaque formation encourages the formation of clots. These clots may in turn block the artery causing a stroke or heart attack. Other factors leading to these diseases are family history, stress, smoking, obesity, lack of exercise and high blood pressure. The best dietary advice for reducing blood cholesterol is to cut down on all fats, especially saturated fats.
As a general rule:
- Oil means fat that is liquid at room temperature.
- Fat means fat that is solid at room temperature.
- Margarine is a vegetable oil that is solid at room temperature because it has been changed by a hardening process called hydrogenation.

About 1/3 of the fat we eat is visible fat. People are conscious of fat in meat, butter and other fatty products.

Hidden fat is in foods such as: cheese, peanut butter, deep-fried foods, nuts, seeds, cream soups, egg yolks, and ice cream.

Saturated fat is often the major ingredient in baked goods, processed meats, instant meals, snack foods, and imitation dairy products.

Fat related words are:
- cream sauce  sautéed
- gravy  crispy
- fried  cheese sauce
- buttery  basted

A healthy diet is balanced with fat moderation and a variety of fats in the diet.
# FATS OF LIFE

How many teaspoons of fat do you think are in the following foods:

- TV Dinner (Salisbury Steak)  __  1 ounce Mozzarella cheese
- Snickers Candy Bar  __  Big Mac
- Tuna packed in water  __  Medium French fries
- 1 ounce American cheese  __  Tuna packed in oil
- 2 wieneres  __  Chicken pot pie
- 3  __  McDLT

(Answers: 7, 2 1/2, 1/2, 1 1/2, 5 1, 6 1/2, 2 1/2, 6, 5, 11)
UNIT AND DAILY LESSON PLANS

Unit Topic: Nutrition - Eating Better in America
Unit: F Lessons: 1, 2
Unit Duration: 2 - 30 minute sessions

Objective
The purpose of this unit is to introduce methods for creating more healthy meals and menus.

1) Instructional Objectives
Upon completion of this unit, the student will:
   a. Select more nutrition items when planning a menu.
   b. Prepare a balanced menu based on the daily food guide.
   c. Substitute more nutritional items for healthier items.
   d. Prepare a modified "Oatmeal Cookie" recipe.

2) Unit Content
   a. Explain what the daily five food groups are.
   b. Explain what the amount of servings are from each group.

3) Procedures and Activities
   a. Assign students to work in groups to complete "Healthier Menu Selections.
   b. Share each group's response.
   c. Display the "Daily Food Guide Pyramid" on a poster.

4) Instructional Aid and Resources
   "Daily Food Guide Pyramid" poster

5) Evaluation
   Participation in classroom discussion, dittos to be handed in.
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: F     Topic: Eating Better in America
Lesson 1: Daily Food Guide Pyramid     Time: 30 minutes

Objective
The student will be able to plan a balanced menu based on the Daily Food Groups.

1) Instructional Objectives
a. Identify the five food groups.
b. Complete the exercises and discuss the possible answers.

2) Assignment
Give handout of the "Daily Food Guide Pyramid" to be used with Healthier Menu Selection Worksheets.

3) Procedure
a. Review the five food groups.
b. Explain the amount of servings needed from each group.
c. Emphasize that the serving amounts include breakfast, lunch and dinner.
d. Have class work on worksheets in class.

4) Instructional Materials
A Daily Food Guide Pyramid Poster.

5) Evaluations
Student performance on worksheet.
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: F  Topic: Eating Better in America
Lesson 2: Daily Food Guide Pyramid  Time: 30 minutes

Objective
The student will be able to plan a balanced menu based on
the Daily Food Groups.

1) Instructional Objectives
   a. Identify the five food groups.
   b. Complete the exercises and discuss the possible
      answers.

2) Assignment
   Complete "Healthier Menu" Selection Worksheets.

3) Procedure
   a. Review the five food groups.
   b. Explain the amount of servings needed from each group.
   c. Emphasize that the serving amounts include breakfast,
      lunch and dinner.
   d. Have class work on worksheets in class.

4) Instructional Materials
   A Daily Food Guide Pyramid Poster.

5) Evaluations
   Student performance on worksheet.
The Food Guide Pyramid is a teaching tool designed by the US. Department of Agriculture. It replaces the four food groups formerly used to define a well-balanced diet. The Food Pyramid shows the variety of foods needed each day to provide essential nutrients. It is made up of five food groups with daily serving recommendations for each; the top of the pyramid is reserved for fats, oils, and sweets. The daily servings recommended for each group take into account the number of calories needed to maintain a healthy weight. The large group at the base of the pyramid, including bread, cereal, rice, and pasta, forms the foundation of a healthy diet. The other four groups—fruits, vegetables, milk and milk products, and meat and meat alternatives—are eaten in lesser amounts as indicated by their size and the number of servings recommended. The top of the pyramid represents foods high in fats, oils, and sugars. High in calories and low in nutrients, this group should be eaten sparingly.
UNIT AND DAILY LESSON PLANS

Daily Lesson Plan

Unit: G  Topic: Nutrition - Occupations and Careers Related to Food Service and Nutrition
Lesson 1: Career Ladder  Time: 1 hour

Objective
This unit is to introduce the students to occupations and careers related to Food Service and Nutrition.

1) Instructional Objectives
The student will:
a. Recognize entry-level positions can lead to a career path in Food Service.
b. Evaluate what type of Food Service industry they want to pursue.
c. Discover the occupations and careers related to Food Service and Nutrition.

2) Assignment
Write a paragraph about what they have learned from the training. List a career that would interest them.

3) Procedure
a. Give an informed lecture on the career paths they can pursue after training.
b. Show career ladder on a transparency.
c. Give examples of the various areas of the Food Service industry.
d. Show transparencies of the Career Tree.
e. Give students a list of careers in the Food Service and Nutrition related careers.

4) Instructional Materials
Overhead projector and transparencies.

5) Evaluations
Complete "Career Work Sheet", followed by discussion.
Career Ladder

Manager/Owner
Assistant Manager
Food Production Manager
Personnel Director
Dietitian
Executive Chef
Purchasing Agent

Food Service Supervisor
Storeroom Supervisor
Tray-Line Supervisor
Dining Room Manager
Catering Manager
Chef
Dietary Technician
Bookkeeper
Assistant Purchasing Agent

Head Walter
Food Supervisor
Kitchen Supervisor
Butcher
Baker
Second Cook
Breakfast Cook
Vegetable Cook
Broiler Cook
Host/Hostess
Checker/Cashier

Dishwasher
Bus Person

Dietary Assistant

Dietary Aid

Waiter/Waitress

Kitchen Helper
Fountain Person
Salad Person
Baker's Assistant
Pantry Worker
Counter Worker
Tray-Line Worker
OCCUPATIONS AND CAREERS RELATED TO FOOD SERVICE AND NUTRITION

Advertising Copywriter
Agricultural Engineer
Maitre D' of a Hotel
Agricultural Extension Service Worker
Airline Food Service Supervisor
Animal Nutritionist
Armed Services Dietitian
Busboy or Busgirl
Botanist
Butcher
Baker
Bartender
Beverage Worker especially popular with
Cafeteria Counter Attendant
Cafeteria Manager/Assistant Manager
Cafeteria Supervisor
Cake Decorator
Caterer
Cashier
Caterer's Assistant
Chef or Cook
Club Dining Director
Community Aid Economist
Concessionaire
Consumer Advocate
Consumer-Business Liaison
Consumer Consultant
Conservationist
Cooking School Owner
Cooperative Extension Food Specialist
Diet Counselor
Diet Counselor for Outpatients
Dietitian
Dining Room Hostess
Director of Recipe Development
Economist
Farmer
Farm Machinery Manufacturer/ Salesperson
Food Broker
Food Buyer
Food Checker
Food Chemist
Food Editor
Food Inspector
Food Photographer
Food Production Manager
Food Service Director Concessionaire
Food Store Owner
Free-lance Writer or Consultant
Gourmet Cookware Shop Owner
Grocery Store or Specialty

Horticulturist
Kitchen Helper
Management Personnel
Marketing Specialist
Meals-on-Wheels Director (preparing ready-to-serve meals for special orders; elderly people, party hostesses and bachelors)
Menu Planner
Merchandising Director
Nutrition Consultant
Nutritionist
Nutrition Researcher
Oceanographer
Pastry Supervisor
Pastry Chef or Baker
Peace Corps or VISTA volunteer
Personnel Director
Private Baker (for special occasions)
Publicity Director for a Food Company
Public Utilities Home Economist
Purchasing Agent
Radio or Television Host or Hostess (Food-related program)
Restaurant Chain Executive
Restaurant Manager or Assistant Manager
Restaurant Owner
Sandwich Maker
Sanitation Worker
School Lunch Consultant
Short-Order Cook
Soda Fountain Worker
Soil Scientist
Space Food Technologist
Storeroom Supervisor
Teacher
Test Kitchen Home Economist
Vending Attendant
Vending Service
Vending Route Man
Waiter or Waitress
CAREER WORK SHEET

The career I researched is ____________________________________________

Answer the following questions about this career:
1. How many years of education does this career require?

2. What is the beginning salary?

3. What are the work hours per day?

4. Are there any extra demands in time, such as travel or homework?

5. What is the average net income?

6. Is any extra expense involved to continue development?

7. What is the monthly income?

8. What gross income could be expected after 20 years?

9. What are the rewards or benefits other than monetary?
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