The National Food Service Management Institute was authorized by Congress in 1989 and established in 1990 at The University of Mississippi in Oxford and is operated in collaboration with The University of Southern Mississippi in Hattiesburg. The Institute operates under a grant agreement with the United States Department of Agriculture, Food and Nutrition Service.

PURPOSE
The purpose of the National Food Service Management Institute is to improve the operation of child nutrition programs through research, education and training, and information dissemination.

MISSION
The mission of the National Food Service Management Institute is to provide information and services that promote the continuous improvement of child nutrition programs.

VISION
The vision of the National Food Service Management Institute is to be the leader in providing education, research, and resources to promote excellence in child nutrition programs.

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Course Checklist

Instructions: In the blanks provided, you can make a check by each assignment as it is completed.

Introduction
Prepare for your class by setting a date and time to take the course, download the course workbook, and have supplies (pen and paper) ready.

Lesson 1:

________ 1. Lesson 1 Pre-Quiz
________ 2. Self-Assessment of Nutrition and Health Interest Interactive Activity
________ 3. Healthful Eating and Healthy Weight Handout
________ 4. Healthful Eating Guide Handout
________ 6. Resource: Nutrition and Health Information Handout
________ 7. Understanding Connections of Nutrition to Health Interactive Activity
________ 8. Video Check for Understanding Interactive Activity
________ 9. Video Check for Understanding Interactive Activity Answer Key
________ 10. Cafeteria Connection: Breakfast for Better Health Handout
________ 11. Cafeteria Connection Check for Understanding Interactive Activity
________ 12. Cafeteria Connection Check for Understanding Interactive Activity Answer Key
________ 13. Taste Bud Time Outs! (Supply List for Lessons 1-10)
________ 14. Personal Discovery Assessment: Habits for Health Activity
________ 15. Lesson 1 Post-Quiz

Lesson 2:

________ 1. Lesson 2 Pre-Quiz
________ 2. Let’s Eat For the Health of It Handout
Lesson 3:

1. Lesson 3 Pre-Quiz
2. Fast Facts About Energy Nutrients Handout
4. Nutrition Facts Label Handout
5. Cafeteria Connection: Energy Balance Handout
6. Video Check for Understanding Interactive Activity
7. Video Check for Understanding Interactive Activity Answer Key
9. Personal Discovery Assessment: Pantry Patrol Activity
Lesson 4:

1. Lesson 4 Pre-Quiz
2. Sources of Simple Sugars Activity
3. Sources of Simple Sugars Activity Sample Card for Betty Baker
4. Nutrition Nuggets: As Simple as One, Two, Three or More! Handout
5. Personal Discovery Assessment: A Matter of Choice Activity
6. Cafeteria Connection: School Solutions Handout
7. Resource: Non-Nutritive Sweeteners (Sugar Substitutes) Handout
8. Lesson 4 Post-Quiz

Lesson 5:

1. Lesson 5 Pre-Quiz
2. Fats and Oils Activity
4. Personal Discovery Assessment: Looking for Lipids Activity
5. Nutrition Nuggets: The Lowdown on Low Fat Recipes Handout
6. The Lowdown on Low Fat Recipes Recipe Modification Activity
7. Cafeteria Connection: Limits on Lipids
8. Cafeteria Connection Check for Understanding Interactive Activity
9. Cafeteria Connection Check for Understanding Interactive Activity Answer Key
10. Lesson 5 Post-Quiz
Lesson 6:

_______ 1. Lesson 6 Pre-Quiz
_______ 2. Resource: Garden Variety Vegetarian Diets Handout
_______ 3. Protein Predictions Activity
_______ 4. Complete Proteins Handout
_______ 5. The Perfect Complement Menu Ideas Handout
_______ 6. Taste Bud Time Out! and Personal Discovery Assessment Activity
_______ 9. Cafeteria Connection: Vegetarian by Choice Handout
_______ 10. Protein Predictions Answer Key
_______ 11. Lesson 6 Post-Quiz

Lesson 7:

_______ 1. Lesson 7 Pre-Quiz
_______ 2. Taste Bud Time Out! The Perception of Bitter Activity
_______ 3. Vital Vitamins and Mighty Minerals From A to Zinc Handout
_______ 4. Personal Discovery Assessment Refrigerator Rater Activity
_______ 7. Vitamins and Minerals Check for Understanding Activity
_______ 8. Vitamins and Minerals Check for Understanding Activity Answer Key
_______ 9. Cafeteria Connection: Pumping Up Performance Handout
_______ 10. Lesson 7 Post-Quiz
Lesson 8:

1. Lesson 8 Pre-Quiz
2. Did You Know? Activity
3. Low Carbohydrate Menu Handout
4. My Plate Menu Handout
5. Compare Two Diet Plans Activity
6. Food Group Fact Sheets Handouts
7. Compare Two Diet Plans Answer Key
8. Personal Discovery Assessment Food Record Handout Activity
9. Lesson 8 Post-Quiz

Lesson 9:

1. Lesson 9 Pre-Quiz
2. Ideas for Making Good Nutrition Easier Activity Form
3. Nutrition Nuggets: Enhancing Flavors Handout
5. Be a Portion Pro Handout
6. Build a Meal Activity
7. Build a Meal Activity Possible Meal Option
8. Cafeteria Connection Tap Into the Power of Taste Handout Activity
10. Personal Discovery Assessment Mindful Eating Activity
11. Lesson 9 Post-Quiz
Lesson 10:

1. Lesson 10 Pre-Quiz
2. Ten Tips for Evaluating Nutrition News Handout
3. Nutrition Information Check for Understanding Interactive Activity
4. Nutrition Information Check for Understanding Interactive Activity Answer Key
5. Resource: Nutrition on the Web Handout
6. Cafeteria Connection Nutrition News Know How Handout Activity
8. Lesson 10 Post-Quiz

Signature ________________________________ Date ____________________
Nutrition Is Important to You!
Nutrition Issues and Health Concerns
Self-Assessment Form

*Nutrition 101: A Taste of Food and Fitness* focuses on basic nutrition topics. Those topics have connections to many current nutrition issues and health concerns which may be of personal interest. Use the self-assessment below to determine your personal areas of interest by putting a check mark next to the topic. Then, use the interactive online activity to see which lessons will provide information related to those specific topics. Make notes on your self-assessment; be prepared to learn about your specific areas of interest.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Lesson(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergies and Food Intolerances</td>
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<tr>
<td>Dental Health</td>
<td></td>
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<tr>
<td>Diabetes</td>
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<tr>
<td>Evaluating Nutrition Information in the Media</td>
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<tr>
<td>Fitness and Physical Activity</td>
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<td>General Healthy Eating</td>
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<td>Healthy Body Weight/Weight Loss</td>
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<td>Heart Disease and Stroke</td>
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<td>Osteoporosis</td>
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<tr>
<td>Reducing Risk of Cancers</td>
<td></td>
</tr>
<tr>
<td>Understanding and Using Food Labels</td>
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</tr>
</tbody>
</table>
Healthful Eating and Healthy Weight

Balance is the key to enjoyable eating and maintaining a healthy weight. Tip the scales in your favor by following the ideas below.

Balance calories eaten with daily activity.
Calories do count. To keep a healthy weight, balance the calories from foods with the calories burned in daily work and play. If you want to lose weight, do it the healthy way. Each day, decrease a few calories eaten and increase a few calories burned. For example, eating 100 fewer calories a day for one year can result in a 10 pound weight loss. If you burn an extra 100 calories a day for a year through increased activity, you could lose another 10 pounds.

Here is a simple example. If you drink a regular soda daily, choose the 12 ounce can instead of the 20 ounce bottle. The smaller portion will reduce calories by about 100 per day. Walk briskly for 15 minutes after work on the school track and for 15 minutes after dinner in your neighborhood. It all adds up, or rather, subtracts from your weight. These two simple changes could result in a 20 pound weight loss in a year!

Balance meals throughout the day.
Meals regularly spaced throughout the day are a way to balance eating. Some people find three meals and a snack, evenly spaced, are just right to fuel work and play. Others find three small meals and three small snacks work better to keep hunger at bay. The key is to watch portion sizes and avoid overeating. Think of your stomach as having a gauge that indicates fullness from 0 (starving) to 10 (stuffed). Pay attention to when you start to feel full—that might be rated in the 7 to 8 range. Let the fullness of your stomach, not the emptiness of your plate, help you decide when you have eaten enough.

Balance choices among food groups.
Take a second look at your food habits. Are you leaving any food groups out of your daily food choices? Mix up the food groups between meals and snacks to have enough of each group. Most people need more fruits, vegetables, low fat milk and milk products, and whole grains. Come up with interesting snacks that include these foods.

Balance choices within food groups.
How many different foods do you eat in a day? In a week? In a month? Expand the number of fruit and vegetable choices eaten over the course of a week. Include a colorful fruit or vegetable, such as orange, red, or dark green, at every meal or snack. Enjoy plant sources of protein as well as meats. For grains, go for more than bread and other wheat products. Select whole grains such as brown rice. Mix up choices from the dairy group. Select milk, cheese, and yogurt. Try to eat different choices from each food group every day. Be adventurous. Try new choices in each food group and enjoy the great flavors you discover.
Healthful Eating Guide

Basic nutrition guidance has withstood the test of time. Balance your daily food choices by selecting foods from each major food group. It is simple advice that is simply delicious. A varied diet provides necessary nutrients. Treat your taste buds to a variety of crunchy, juicy, flavorful foods.

For delicious, nutritious meals

- Pick plenty of produce. Strive for 1 ½ cups fruits and 2 ½ cups vegetables each day.
- Grab wholesome grains. Include at least 6 servings daily, with half from whole grain choices.
- Count on calcium rich milk. Choose 3 servings of fat-free or low fat milk products each day.
- Mix up meat, fish, and beans. Consume 4 to 6 ounces total of lean meat choices a day. Try to
  - Select 4 to 6 ounces of salmon, tuna or other fatty fish a few times a week.
  - Include dried beans, legumes, and peas several times a week.
  - Nibble on nuts. Grab a small handful a few times a week.
- Savor a sweet dessert or salty snack. Eat these foods every once in a while, not every day.

Choose these foods each day to fill you up without filling you out. When more of your plate is full of fruits, vegetables, and whole grains, there is less room for fatty foods, salty snacks, and sweets.

Here is a sample day of flavorful, healthful meals

<table>
<thead>
<tr>
<th>Breakfas dt</th>
<th>Dinner</th>
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</thead>
<tbody>
<tr>
<td><strong>BREAKFAST</strong></td>
<td><strong>DINNER</strong></td>
</tr>
<tr>
<td>1 cup cooked oatmeal</td>
<td>3 ounces cooked, lean ground beef</td>
</tr>
<tr>
<td>1 tablespoon chopped pecans</td>
<td>1 large cracked wheat hamburger bun</td>
</tr>
<tr>
<td>1/4 cup chopped dried fruit</td>
<td>Slice of red onion, tomato, and leaf lettuce</td>
</tr>
<tr>
<td>(i.e., apricots, cranberries, and dates)</td>
<td>3/4 cup steamed broccoli with a squeeze of lemon juice</td>
</tr>
<tr>
<td>1 cup fat-free milk</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Lunch</th>
<th>Snack</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LUNCH</strong></td>
<td><strong>SNACK</strong></td>
</tr>
<tr>
<td>2 cups mixed salad greens</td>
<td>1 cup low fat lemon yogurt</td>
</tr>
<tr>
<td>(i.e., romaine and spinach)</td>
<td>1/2 cup blueberries (i.e., fresh, canned, or frozen)</td>
</tr>
<tr>
<td>1/2 cup chopped tomato, cucumber, and carrot slices</td>
<td>3 graham cracker squares</td>
</tr>
<tr>
<td>1 ounce turkey breast</td>
<td></td>
</tr>
<tr>
<td>1 1/2 ounces part-skim mozzarella cheese, shredded</td>
<td></td>
</tr>
<tr>
<td>2 tablespoons olive oil and vinegar dressing</td>
<td>Add a low calorie beverage such as hot tea or sparkling water at meals, if desired.</td>
</tr>
<tr>
<td>5 whole wheat crackers</td>
<td>Energize your life with wise food choices and enjoyable daily activity.</td>
</tr>
<tr>
<td>1 large piece of fresh fruit</td>
<td></td>
</tr>
</tbody>
</table>
10 tips
Nutrition News

choose MyPlate
10 tips to a great plate

Making food choices for a healthy lifestyle can be as simple as using these 10 Tips.
Use the ideas in this list to balance your calories, to choose foods to eat more often, and to cut back on foods to eat less often.

1 balance calories
Find out how many calories YOU need for a day as a first step in managing your weight. Go to www.ChooseMyPlate.gov to find your calorie level. Being physically active also helps you balance calories.

2 enjoy your food, but eat less
Take the time to truly enjoy your food as you eat it. Eating too fast or when your attention is elsewhere may lead to eating too many calories. Pay attention to hunger and fullness cues before, during, and after meals. Use them to recognize when to eat and when you’ve had enough.

3 avoid oversized portions
Use a smaller plate, bowl, and glass. Portion out foods before you eat. When eating out, choose a smaller size option, share a dish, or take home part of your meal.

4 foods to eat more often
Eat more vegetables, fruits, whole grains, and fat-free or 1% milk and dairy products. These foods have the nutrients you need for health—including potassium, calcium, vitamin D, and fiber. Make them the basis for meals and snacks.

5 make half your plate fruits and vegetables
Choose red, orange, and dark-green vegetables like tomatoes, sweet potatoes, and broccoli, along with other vegetables for your meals. Add fruit to meals as part of main or side dishes or as dessert.

6 switch to fat-free or low-fat (1%) milk
They have the same amount of calcium and other essential nutrients as whole milk, but fewer calories and less saturated fat.

7 make half your grains whole grains
To eat more whole grains, substitute a whole-grain product for a refined product—such as eating whole-wheat bread instead of white bread or brown rice instead of white rice.

8 foods to eat less often
Cut back on foods high in solid fats, added sugars, and salt. They include cakes, cookies, ice cream, candies, sweetened drinks, pizza, and fatty meats like ribs, sausages, bacon, and hot dogs. Use these foods as occasional treats, not everyday foods.

9 compare sodium in foods
Use the Nutrition Facts label to choose lower sodium versions of foods like soup, bread, and frozen meals. Select canned foods labeled “low sodium,” “reduced sodium,” or “no salt added.”

10 drink water instead of sugary drinks
Cut calories by drinking water or unsweetened beverages. Soda, energy drinks, and sports drinks are a major source of added sugar, and calories, in American diets.

Go to www.ChooseMyPlate.gov for more information.
Resource Nutrition and Health Information

Do you want to start a walking program or a healthy weight plan? Do you need more information about a disease or health condition? Help is just a mouse click or phone call away. Contact these organizations for helpful information. Many have local chapters in communities nationwide. Check your local phone directory for regional offices.

American Cancer Society
www.cancer.org

American Dental Association
211 East Chicago Ave.
Chicago, IL  60611-2678
www.ada.org

American Diabetes Association
ATTN: National Call Center
1701 North Beauregard Street
Alexandria, VA  22311
www.diabetes.org

Academy of Nutrition and Dietetics
120 South Riverside Plaza, Suite 2000
Chicago, IL  60606
www.eatright.org

American Heart Association
and American Stroke Association
National Center
7272 Greenville Avenue
Dallas, TX  75231
www.americanheart.org

America on the Move
www.americaonthemove.org

March of Dimes
1275 Mamaroneck Avenue
White Plains, NY  10605
www.modimes.org

National Osteoporosis Foundation
1232 22nd Street, N.W.
Washington, D.C.  20037-1292
www.nof.org

The American Cancer, Diabetes, and Heart Associations jointly sponsor a website, Everyday Choices for a Healthier Life, www.everydaychoices.org
Video Check for Understanding
Interactive Activity

**Directions:** After watching the video, read the following statements and decide which statements are true and which are false. If the statement is false, what changes would you make to correct the statement and make it true?

_______ 1. A person cannot take steps to either delay the onset of a disease that may be common in his or her family or prevent developing the disease. Working with a health professional cannot help shape choices to achieve optimal health.

_______ 2. A healthy body weight helps reduce risk of chronic disease.

_______ 3. Helping children develop healthy eating habits is one way to reduce the risk of chronic diseases. History is not destined to repeat itself. Often children can help adults make changes that are healthy for the entire family.

_______ 4. Our daily choices cannot change our risk of disease – both food and activity choices.

_______ 5. An important step to reducing risk is to know your personal history and risk factors. Then talk to your doctor or dietitian about changes in food choices and activity that maximize health. Knowledge is power; action is more powerful!
Video Check for Understanding
Interactive Activity Answer Key

Directions: After watching the video, read the following statements and decide which statements are true and which are false. If the statement is false, what changes would you make to correct the statement and make it true?

____ 1. A person cannot take steps to either delay the onset of a disease that may be common in his or her family or prevent developing the disease. Working with a health professional cannot help shape choices to achieve optimal health.

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____ 5. An important step to reducing risk is to know your personal history and risk factors. Then talk to your doctor or dietitian about changes in food choices and activity that maximize health. Knowledge is power; action is more powerful!
Cafeteria Connection
Breakfast for Better Health

Breakfast has been called the most important meal of the day. While no meal can truly claim that ranking, eating breakfast is one nutrition habit that pays big health rewards.

Breakfast Eaters Are
• Less likely to be overweight
• More likely to have higher nutrient intakes

The School Breakfast Program provides students of all ages with a nutritious meal to break the fast. School breakfast studies conducted in several states show consistent results. Students’ health and school scores both improve when students eat school breakfast. For details on the studies and links to reports, check out the following website:
http://school.fueluptoplay60.com/tools/nutrition-education/school-nutrition.php

Students Who Eat School Breakfast Have
• Better test scores
• More days in school
• Fewer problem behaviors in class
• Fewer missed days due to illness
• Better attention spans
• Fewer visits to the nurse’s office
• More days at school on time
• Better nutrition through a balanced meal

School breakfast provides one fourth of the nutrition a student needs each day. Many times, school breakfast is more nutritious than the foods a student may select from home or on the way to school. Often students buy snack type items from a convenience store or a vending machine. School breakfasts provide a balance of calories and important nutrients, including calcium, riboflavin, phosphorus, and magnesium.

Many tools are available to help schools start, promote, and extend school breakfast. For more information on the benefits of school breakfast, check out the resources at these websites www.fns.usda.gov/cnd/breakfast/ and http://frac.org/federal-foodnutrition-programs/.

The National Food Service Management Institute has resources available on school breakfast. Check the website, www.nfsmi.org, or call (800) 321-3054 for more information.

Expanding Breakfast and Breakfast in the Classroom are resources available from the National Dairy Council and the Child Nutrition Foundation. For more information, contact your local Dairy Council or look for school breakfast resources on the School Nutrition Association’s website at www.schoolnutrition.org/ResourceCenter.aspx.
Directions: Review the statements about breakfast and check the ones that reflect what you learned reading the Cafeteria Connection.

_____ School breakfast can improve students’ health.

_____ Students who eat breakfast improve their social skills.

_____ Students who eat school breakfast have more visits to the nurse’s office.

_____ Students who eat school breakfast have improved nutrition compared to students who skip breakfast.

_____ One reason students who eat school breakfast may have better test scores is that they are less likely to miss school than students who don’t eat school breakfast.

_____ School breakfast is difficult for school nutrition programs to promote or market because there are few materials and programs designed for this purpose.

_____ School breakfast provides one-fourth of the nutritional needs of students.
Directions: Review the statements about breakfast and check the ones that reflect what you learned reading the Cafeteria Connection.

√ ___ School breakfast can improve students’ health.

_____ Students who eat breakfast improve their social skills.

_____ Students who eat school breakfast have more visits to the nurse’s office.

√ ___ Students who eat school breakfast have improved nutrition compared to students who skip breakfast.

√ ___ One reason students who eat school breakfast may have better test scores is that they are less likely to miss school than students who don’t eat school breakfast.

_____ School breakfast is difficult for school nutrition programs to promote or market because there are few materials and programs designed for this purpose.

√ ___ School breakfast provides one-fourth of the nutritional needs of students.
Taste Bud Time Out!

Here is a Supply List for the Taste Bud Time Out!

Lesson 2
Corn chip or potato chip and ground pepper

Lesson 3
Grapefruit, salt shaker, sugar

Lesson 4
Assorted jelly beans

Lesson 5
Extra virgin olive oil and another oil such as light olive oil, Spanish, or other variety of olive oil
Slice of French or Italian bread (plain white bread)

Lesson 6
Quinoa, hummus, roasted soy nuts, or tofu – a vegetable protein unfamiliar to you

Lesson 7
Radicchio (red lettuce in Italian blends), lemon wedge, and salt shaker
Radicchio is a head type lettuce; just one leaf is needed – check the produce department. It is also part of premade bagged salads. If Radicchio is not available, tonic water can be substituted.

Lesson 8
1 piece each (drop or kiss size) milk chocolate and dark chocolate

Lesson 9
Nuts such as walnut, pecan or sliced almonds, raw and toasted
To toast nuts: place nut pieces on a baking sheet in a 375 °F oven for 8-10 minutes. Watch nuts closely; when pieces start to turn a light brown color, remove from the oven. The nuts will continue to toast on the hot tray. To toast nuts in microwave, spread walnut pieces evenly on glass pie plate and microwave on high for 5-6 minutes, and stir every 2 minutes. Sliced nuts toast easily in a skillet over medium heat.

Lesson 10
Commercial applesauce, no sugar and no salt added variety
Applesauce made from a fresh red or yellow Delicious apple
To make fresh applesauce: Wash, peel and dice apple. Place pieces in a small pan with 1 T of water. Simmer slowly over low heat until apple pieces are tender, at least 30 minutes. Add additional water as needed to prevent scorching. Stir vigorously to create a chunky sauce. If desired, mash with fork.
Personal Discovery Assessment
Habits for Health

For 3 days keep a record of the foods you choose to eat and the activities you choose to do. Make a mark in the “selected” column every time you choose to eat a food on the list. Keep a similar record of your physical activities. Common activities and foods from each food group are listed. Add foods and activities as needed.

Here is an example of how to complete the form. Green beans are on the menu at school one day and at home on another. Cauliflower is served for dinner at home. If you chose to eat the vegetables every time, your tally would look like.

<table>
<thead>
<tr>
<th>Vegetable Foods</th>
<th>Selected</th>
<th>Protein</th>
<th>Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Beans</td>
<td>II</td>
<td>Breaded Chicken Patty or Nuggets</td>
<td></td>
</tr>
<tr>
<td>Cauliflower</td>
<td>I</td>
<td>Luncheon Meats</td>
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<tr>
<td></td>
<td></td>
<td>Eggs</td>
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<tr>
<td></td>
<td></td>
<td>Cooked Beans</td>
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<tr>
<td></td>
<td></td>
<td>Lean Red Meat</td>
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<tr>
<td></td>
<td></td>
<td>Ground Beef</td>
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<td></td>
<td></td>
<td>Pork Chop</td>
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<tr>
<td></td>
<td></td>
<td>Tofu</td>
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<tr>
<td></td>
<td></td>
<td>Peanut Butter</td>
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<tr>
<td></td>
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<td>Canned Fish</td>
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<td></td>
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<tr>
<td>Banana</td>
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<tr>
<td>Orange Juice</td>
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<tr>
<td>Peach</td>
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<td></td>
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<tr>
<td>Blueberries</td>
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<td></td>
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<tr>
<td>Dried Cranberries</td>
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<tr>
<td>Dried Apricots</td>
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</tr>
<tr>
<td>Pears</td>
<td></td>
<td></td>
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<tr>
<td>Fruit Cocktail</td>
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<table>
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<th>Vegetable *</th>
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<tr>
<td></td>
<td></td>
<td>Carrots</td>
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<td></td>
<td></td>
<td>Tomatoes</td>
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<td></td>
<td></td>
<td>Broccoli</td>
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<td></td>
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<td>Kale</td>
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<td></td>
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<td>Potatoes</td>
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<td></td>
<td></td>
<td>Corn</td>
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<tr>
<td></td>
<td></td>
<td>Pinto Beans</td>
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<td></td>
<td></td>
<td>Lentils</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Iceberg Lettuce</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Beans</td>
<td></td>
</tr>
</tbody>
</table>

*Vegetables are organized by subgroup:
Red/Orange; Dark Green; Starchy, Legume, Other
### Dairy
- Cottage Cheese
- Low Fat Milk
- Cheddar Cheese
- Plain Yogurt
- Fat-Free Milk
- Part Skim Mozzarella Cheese
- Chocolate Milk
- Café Latte or Mocha
- Flavored Yogurt

### Grains
- Whole Wheat Bread
- Sour Dough Bread
- Saltine Crackers
- Enriched Noodles
- Brown Rice
- French Bread
- Hotdog or HB Bun
- Oatmeal
- Corn Tortilla
- Raisin Bran Cereal

### Sweets and Snacks
- Chips
- Candy
- Doughnuts
- Popcorn
- Ice Cream
- Soft Drinks/Soda
- Cake
- Snack Crackers
- Cookies

### Activity Options
- Swimming
- Gardening
- Mall Walking
- Dance Class
- Stretching
- Yoga Class
- Biking
- Play Tag w/Kids
- Jump Rope
- Walk the Dog

Think about these questions:

Did I eat from a variety of food groups each day? _____________________________________
_____________________________________________________________________________

Did I eat a variety of foods from each food group over 3 days? ___________________________
_____________________________________________________________________________

Did I take advantage of enjoying different activities? ___________________________________
_____________________________________________________________________________
Self Discovery
What did you learn about your eating and activity habits?

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

What is one change you want to make after completing this activity?

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Make a plan for change

I plan to:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

I will do this by:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

If this plan does not work, I will try:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
Lesson 1 Pre- and Post-Quiz

1. The brain requires a constant supply of fuel from which energy nutrient?
   a. amino acids
   b. trans fat
   c. carbohydrate
   d. biotin

2. Those with a family history of a disease, such as diabetes, may reduce their risk of developing the disease if they
   a. live a healthful lifestyle with balanced food and activity choices.
   b. continue their current activity level since developing diabetes is inevitable.
   c. adhere to a strict dietary restriction of all carbohydrate foods.
   d. increase the amount of calories consumed.

3. The fiber from fruits, vegetables, and whole grains may reduce the risk of developing
   a. osteoporosis.
   b. macular degenerative disease.
   c. heart disease and type 2 diabetes.
   d. osteoarthritis and lung cancer.

4. Balancing calories from foods eaten and energy burned through activity is the key to
   a. eating as much food as you want.
   b. preparing healthy meals.
   c. research on diets.
   d. maintaining a healthy weight.

5. Enjoying the foods we eat
   a. is an important part of good nutrition and health.
   b. must be given up to reduce disease risk.
   c. only counts for special occasions and celebrations.
   d. is a preoccupation with food and an eating disorder.
Tools for Guiding Food Choices
Let’s eat for the health of it

Start by choosing one or more tips to help you...

Build a healthy plate
Cut back on foods high in solid fats, added sugars, and salt
Eat the right amount of calories for you
Be physically active your way
Build a healthy plate

Before you eat, think about what goes on your plate or in your cup or bowl. Foods like vegetables, fruits, whole grains, low-fat dairy products, and lean protein foods contain the nutrients you need without too many calories. Try some of these options.

Make half your plate fruits and vegetables.
- Eat red, orange, and dark-green vegetables, such as tomatoes, sweet potatoes, and broccoli, in main and side dishes.
- Eat fruit, vegetables, or unsalted nuts as snacks—they are nature’s original fast foods.

Switch to skim or 1% milk.
- They have the same amount of calcium and other essential nutrients as whole milk, but less fat and calories.
- Try calcium-fortified soy products as an alternative to dairy foods.

Make at least half your grains whole.
- Choose 100% whole-grain cereals, breads, crackers, rice, and pasta.
- Check the ingredients list on food packages to find whole-grain foods.

Vary your protein food choices.
- Twice a week, make seafood the protein on your plate.
- Eat beans, which are a natural source of fiber and protein.
- Keep meat and poultry portions small and lean.

Keep your food safe to eat—learn more at www.FoodSafety.gov.

Cut back on foods high in solid fats, added sugars, and salt

Many people eat foods with too much solid fats, added sugars, and salt (sodium). Added sugars and fats load foods with extra calories you don’t need. Too much sodium may increase your blood pressure.

Choose foods and drinks with little or no added sugars.
- Drink water instead of sugary drinks. There are about 10 packets of sugar in a 12-ounce can of soda.
- Select fruit for dessert. Eat sugary desserts less often.
- Choose 100% fruit juice instead of fruit-flavored drinks.

Look out for salt (sodium) in foods you buy—it all adds up.
- Compare sodium in foods like soup, bread, and frozen meals—and choose the foods with lower numbers.
- Add spices or herbs to season food without adding salt.

Eat fewer foods that are high in solid fats.
- Make major sources of saturated fats—such as cakes, cookies, ice cream, pizza, cheese, sausages, and hot dogs—occasional choices, not everyday foods.
- Select lean cuts of meats or poultry and fat-free or low-fat milk, yogurt, and cheese.
- Switch from solid fats to oils when preparing food.*

*Examples of solid fats and oils

<table>
<thead>
<tr>
<th>Solid Fats</th>
<th>Oils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef, pork, and chicken fat</td>
<td>Canola oil</td>
</tr>
<tr>
<td>Butter, cream, and milk fat</td>
<td>Corn oil</td>
</tr>
<tr>
<td>Coconut, palm, and palm kernel oils</td>
<td>Cottonseed oil</td>
</tr>
<tr>
<td>Hydrogenated oil</td>
<td>Olive oil</td>
</tr>
<tr>
<td>Partially hydrogenated oil</td>
<td>Peanut oil</td>
</tr>
<tr>
<td>Shortening</td>
<td>Safflower oil</td>
</tr>
<tr>
<td>Stick margarine</td>
<td>Sunflower oil</td>
</tr>
<tr>
<td></td>
<td>Tub (soft) margarine</td>
</tr>
<tr>
<td></td>
<td>Vegetable oil</td>
</tr>
</tbody>
</table>
Eat the right amount of calories for you

Everyone has a personal calorie limit. Staying within yours can help you get to or maintain a healthy weight. People who are successful at managing their weight have found ways to keep track of how much they eat in a day, even if they don’t count every calorie.

Cook more often at home, where you are in control of what’s in your food.

When eating out, choose lower calorie menu options:

• Check posted calorie amounts.
• Choose dishes that include vegetables, fruits, and/or whole grains.
• Order a smaller portion or share when eating out.

Write down what you eat to keep track of how much you eat.

If you drink alcoholic beverages, do so sensibly—limit to 1 drink a day for women or to 2 drinks a day for men.

Enjoy your food, but eat less.

• Get your personal daily calorie limit at www.choosemyplate.gov and keep that number in mind when deciding what to eat.
• Think before you eat...is it worth the calories?
• Avoid oversized portions.
• Use a smaller plate, bowl, and glass.
• Stop eating when you are satisfied, not full.

Be physically active your way

Pick activities that you like and start by doing what you can, at least 10 minutes at a time. Every bit adds up, and the health benefits increase as you spend more time being active.

Note to parents

What you eat and drink and your level of physical activity are important for your own health, and also for your children’s health.

You are your children’s most important role model. Your children pay attention to what you do more than what you say.

You can do a lot to help your children develop healthy habits for life by providing and eating healthy meals and snacks. For example, don’t just tell your children to eat their vegetables—show them that you eat and enjoy vegetables every day.
Use food labels to help you make better choices

Most packaged foods have a Nutrition Facts label and an ingredients list. For a healthier you, use this tool to make smart food choices quickly and easily.

Check for calories. Be sure to look at the serving size and how many servings you are actually consuming. If you double the servings you eat, you double the calories.

Choose foods with lower calories, saturated fat, trans fat, and sodium.

Check for added sugars using the ingredients list. When a sugar is close to first on the ingredients list, the food is high in added sugars. Some names for added sugars include sucrose, glucose, high fructose corn syrup, corn syrup, maple syrup, and fructose.

Dietary Guidelines for Americans

The Dietary Guidelines for Americans, 2010 are the best science-based advice on how to eat for health. The Guidelines encourage all Americans to eat a healthy diet and be physically active.

Improving what you eat and being active will help to reduce your risk of chronic diseases such as diabetes, heart disease, some cancers, and obesity. Taking the steps in this brochure will help you follow the Guidelines.

For more information, go to:
- www.ChooseMyPlate.gov
- www.Health.gov/paguidelines
- www.HealthFinder.gov

USDA Publication number: Home and Garden Bulletin No. 235-CP
HHS Publication number: HHSP200-2010-09-DGA-8
June 2011

The U.S. Departments of Agriculture and Health and Human Services are equal opportunity providers and employers.
Nutrition Nuggets
Nutrition Facts Label

Quick Tips for Understanding a Food Label
For a healthier you, use this tool to make smart food choices quickly and easily. Try the following tips:

- Look at the serving size and how many servings you are actually consuming. If you double the servings you eat, you double the calories and nutrients, including the percent of the daily values (DV).
- Make your calories count. Look at the calories on the label and compare them with what nutrients you are also getting to decide whether the food is worth eating. Think about the number of calories compared to the amount of nutrients available before you consume the item.
- Keep these low: saturated fats, *trans* fats, cholesterol, and sodium.
- Get enough of these: potassium, fiber, vitamins A and C, calcium, and iron.
- Use the % Daily Value (DV) column when possible: 5% DV or less is low, 20% DV or more is high. Check servings and calories.
- Don’t sugarcoat it. Since sugars contribute calories with few, if any, nutrients, look for foods and beverages low in added sugars. Read the ingredient list and make sure that added sugars are not one of the first few ingredients. Some names for added sugars (caloric sweeteners) include sucrose, glucose, high fructose corn syrup, corn syrup, maple syrup, and fructose.
- Know your fats. Look for foods low in saturated fats, *trans* fats, and cholesterol to help reduce the risk of heart disease (5% DV or less is low, 20% DV or more is high). Most of the fats you eat should be polyunsaturated and monounsaturated fats. Keep total fat intake between 20% and 35% of calories.
- Reduce sodium (salt), increase potassium. Research shows that eating less than 2,300 milligrams of sodium (about 1 teaspoon of salt) per day may reduce the risk of high blood pressure. Most of the sodium people eat comes from processed foods, not from the salt shaker. Also, look for foods high in potassium, which counteracts some of sodium’s effects on blood pressure.

In the following Nutrition Facts label certain sections are color coded to help you focus on those areas. You will not see these colors on the food labels on products you purchase.
## Sample Label for Macaroni & Cheese

### Nutrition Facts

**Serving Size:** 1 cup (228g)  
**Servings Per Container:** 2

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories 250</th>
<th>Calories from Fat 110</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>12g</td>
<td>18%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>3g</td>
<td>15%</td>
</tr>
<tr>
<td>Trans Fat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td>30mg</td>
<td>10%</td>
</tr>
<tr>
<td>Sodium</td>
<td>470mg</td>
<td>20%</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>31g</td>
<td>10%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>0g</td>
<td>0%</td>
</tr>
<tr>
<td>Sugars</td>
<td>5g</td>
<td></td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td>5g</td>
<td></td>
</tr>
</tbody>
</table>

### Quick Guide to % DV

- **5% or less is Low**
- **20% or more is High**

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

<table>
<thead>
<tr>
<th>Calories:</th>
<th>2,000</th>
<th>2,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat</td>
<td>Less than 65g</td>
<td>80g</td>
</tr>
<tr>
<td>Sat Fat</td>
<td>Less than 20g</td>
<td>25g</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Less than 300mg</td>
<td>300mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>Less than 2,400mg</td>
<td>2,400mg</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>300g</td>
<td>375g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>25g</td>
<td>30g</td>
</tr>
</tbody>
</table>

Source: This information is an excerpt from How to Use and Understand the Nutrition Facts Label, found at the following Website: [http://www.fda.gov/Food/ResourcesForYou/Consumers/NFLPM/ucm274593.htm#twoparts](http://www.fda.gov/Food/ResourcesForYou/Consumers/NFLPM/ucm274593.htm#twoparts)

For more information on using food labels, check out  
[http://www.fda.gov/Food/ResourcesForYou/Consumers/NFLPM/default.htm](http://www.fda.gov/Food/ResourcesForYou/Consumers/NFLPM/default.htm)
It's clear that Americans have a taste for salt, but salt plays a role in high blood pressure. Everyone, including kids, should reduce their sodium intake to less than 2,300 milligrams of sodium a day (about 1 teaspoon of salt). Adults age 51 and older, African Americans of any age, and individuals with high blood pressure, diabetes, or chronic kidney disease should further reduce their sodium intake to 1,500 mg a day.

1. Think fresh
Most of the sodium Americans eat is found in processed foods. Eat highly processed foods less often and in smaller portions—especially cheesy foods, such as pizzas; cured meats, such as bacon, sausage, hot dogs, and deli luncheon meats; and ready-to-eat foods, like canned chili, ravioli, and soups. Fresh foods are generally lower in sodium.

2. Enjoy home-prepared foods
Cook more often at home—where you are in control of what's in your food. Preparing your own foods allows you to limit the amount of salt in them.

3. Fill up on veggies and fruits—they are naturally low in sodium
Eat plenty of vegetables and fruits—fresh or frozen. Eat a vegetable or fruit at every meal.

4. Choose dairy and protein foods that are lower in sodium
Choose more fat-free or low-fat milk and yogurt in place of cheese, which is higher in sodium. Choose fresh beef, pork, poultry, and seafood, rather than those with salt added. Dei or luncheon meats, sausages, and canned products like corned beef are higher in sodium. Choose unsalted nuts and seeds.

5. Adjust your taste buds
Cut back on salt little by little—and pay attention to the natural tastes of various foods. Your taste for salt will lessen over time.

6. Skip the salt
Skip adding salt when cooking. Keep salt off the kitchen counter and the dinner table. Use spices, herbs, garlic, vinegar, or lemon juice to season foods or use no-salt seasoning mixes. Try black or red pepper, basil, curry, ginger, or rosemary.

7. Read the label
Read the Nutrition Facts label and the ingredients statement to find packaged and canned foods lower in sodium. Look for foods labeled “low sodium,” “reduced sodium,” or “no salt added.”

8. Ask for low-sodium foods when you eat out
Restaurants may prepare lower sodium foods at your request and will serve sauces and salad dressings on the side so you can use less.

9. Pay attention to condiments
Foods like soy sauce, ketchup, pickles, olives, salad dressings, and seasoning packets are high in sodium. Choose low-sodium soy sauce and ketchup. Have a carrot or celery stick instead of olives or pickles. Use only a sprinkling of flavoring packets instead of the entire packet.

10. Boost your potassium intake
Choose foods with potassium, which may help to lower your blood pressure. Potassium is found in vegetables and fruits, such as potatoes, beet greens, tomato juice and sauce, sweet potatoes, beans (white, lima, kidney), and bananas. Other sources of potassium include yogurt, clams, halibut, orange juice, and milk.

Go to www.ChooseMyPlate.gov for more information.
#### Sample Label for Refried Beans

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving Size 1/2 cup (125g)</td>
</tr>
<tr>
<td>Servings per Container 3.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount per Serving</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>90</td>
</tr>
<tr>
<td>Calories from Fat</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Fat</th>
<th>0g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated Fat</td>
<td>0g</td>
</tr>
<tr>
<td>Trans Fat</td>
<td>0g</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>0mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>590mg</td>
</tr>
<tr>
<td>% Daily Value*</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Carbohydrate</th>
<th>20g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietary Fiber</td>
<td>5g</td>
</tr>
<tr>
<td>Sugars</td>
<td>1g</td>
</tr>
<tr>
<td>Protein</td>
<td>7g</td>
</tr>
</tbody>
</table>

| Vitamin A | 0% |
| Vitamin C | 0% |
| Calcium | 4% |
| Iron | 10% |

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

<table>
<thead>
<tr>
<th>Calories</th>
<th>2,000</th>
<th>2,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat less than</td>
<td>65g</td>
<td>80g</td>
</tr>
<tr>
<td>Sat Fat less than</td>
<td>20g</td>
<td>25g</td>
</tr>
<tr>
<td>Cholesterol less than</td>
<td>300mg</td>
<td>300mg</td>
</tr>
<tr>
<td>Sodium less than</td>
<td>2,400mg</td>
<td>2,400mg</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>300g</td>
<td>300g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>25g</td>
<td>25g</td>
</tr>
</tbody>
</table>

Ingredients: Cooked Beans, water, less than 2% of: salt, natural flavor, garlic powder, autolyzed yeast extract, partially hydrogenated soybean oil*, spice.

*Add trace amount of fat.
Nutrition Facts Label Activity

Evaluate a Food Using the Nutrition Facts Label

This activity provides practice in using the food label and Dietary Guidelines to evaluate how a food fits into food choices over time. Follow the steps below.

1. List a health or nutrition interest/goal: _______________________________________________

2. Identify a nutrient and a dietary guideline that relates to that interest/goal:

   Nutrient: ________________________________________________________________
   Dietary guideline: ________________________________________________________

3. Use the Nutrition Facts information from the food label.

4. Circle the information written on the food label that is related to the health concern/goal and dietary guideline.

5. Evaluate a serving of this food for how it contributes to achieving the health goal and dietary guideline by answering these questions:

   Does the food provide the nutrient?  Yes  No

   Does the food provide 5% DV or less of the nutrient (low in the nutrient)?  Yes  No

   Does the food provide 20% DV or more of the nutrient (high in the nutrient)?  Yes  No

How does this food fit into healthful eating for the nutrient and health goal/concern?

________________________________________

________________________________________
Nutrition Facts Label Activity

Answer Key

Evaluate a Food Using the Nutrition Facts Label

This activity provides practice in using the food label and Dietary Guidelines to evaluate how a food fits into food choices over time.

Follow the steps below.

1. List a health or nutrition interest/goal: _______ Iron Deficiency Anemia _______

2. Identify a nutrient and a dietary guideline that relates to that interest/goal:
   Nutrient: _______ Iron _______
   Dietary guideline: _______ Meet nutrient needs within energy requirements _______

3. Use the Nutrition Facts information from a selected food package.

4. Circle the information written on the food label that is related to the health concern/goal and dietary guideline. Use the sample food label for Refried Beans in your workbook.

5. Evaluate a serving of this food for how it contributes to achieving the health concern and dietary guideline by answering these questions:
   Does the food provide the nutrient? Yes  No
   Does the food provide 5% DV or less of the nutrient (low in the nutrient)? Yes  No
   Does the food provide 20% DV or more of the nutrient (high in the nutrient)? Yes  No

How does this food fit into healthful eating for the nutrient and health goal/concern?

These refried beans are a medium source of iron with fewer than 100 calories per serving. Two servings (1 cup) would provide 20% daily value for iron and 180 calories.
Nutrition Facts Label Evaluation Form

Evaluate a Food Using the Nutrition Facts Label

This activity provides practice in using the food label and Dietary Guidelines to evaluate how a food fits into food choices over time. Follow the steps below.

1. List a health or nutrition interest/goal: ____________________________________________

2. Identify a nutrient and a dietary guideline that relates to that interest/goal:
   
   Nutrient: ____________________________________________
   
   Dietary guideline: ____________________________________________

3. Use the Nutrition Facts information from the food label.

4. Circle the information written on the food label that is related to the health concern/goal and dietary guideline.

5. Evaluate a serving of this food for how it contributes to achieving the health goal and dietary guideline by answering these questions:
   
   Does the food provide the nutrient? Yes   No
   
   Does the food provide 5% DV or less of the nutrient (low in the nutrient)? Yes   No
   
   Does the food provide 20% DV or more of the nutrient (high in the nutrient)? Yes   No

   How does this food fit into healthful eating for the nutrient and health goal/concern?

   ____________________________________________
   
   ____________________________________________
Cafeteria Connection
Serving Up the Dietary Guidelines with Style

School Breakfast, Lunch, and Afterschool Snack Programs and the Summer Food Service Program present unique opportunities to put the *Dietary Guidelines for Americans 2010* into action. Put the *Guidelines* on the serving line with the menu suggestions below. You can use these tips at home, too.

Breakfast is a great meal to encourage whole-grain foods and support the dietary tip to “make half your grains whole.” Some options include

- Serve whole grain ready-to-serve and cooked cereals.
- Offer toast made with 100% whole wheat bread.
- Wrap beans, scrambled eggs, cheese, vegetables, or salsa in whole wheat tortillas.
- Provide whole wheat bagels or whole-grain English muffins.
- Serve egg and cheese breakfast sandwiches on whole-grain English muffins.
- Use whole wheat flour and rolled oats in recipes for baked bread items.

Vary the vegetables offered during lunch. Include different colors, such as dark green, red/orange, and different types of vegetables, such as legumes and starchy vegetables, several times a week. Try one of the following ideas:

- Create seasonal salad bar choices with a wide variety of deeply colored vegetables.
- Put more green in specialty salads by combining fresh spinach or romaine lettuce with traditional iceberg lettuce blends.
- Serve soups made with beans, cubed sweet potatoes or winter squash, and sliced carrots.
- Introduce ethnic foods featuring dried beans, peas, and lentils.
- Assemble Asian rice bowls by layering assorted vegetables and lean meat mixtures over brown rice.
- Make Mexican wraps featuring brown rice and cooked beans/meat, salsa, cheese, and chopped tomato.

The Afterschool Snack service and the Summer Food Service Program are perfect places to put more whole fruit into children’s diets. Summer feeding programs can capitalize on the variety of mouthwatering fresh fruits in season during summertime. Creative combinations include

- Slice apples, pears, and bananas to dip in peanut butter or sunflower seed butter.
- Make a fruit pizza with graham crackers, cream cheese, and bite-size fresh fruit pieces.
- Chunk seasonal melons and serve with pretzel sticks for Make Your Own Fruit Kabobs.
- Layer fresh fruit and berries with yogurt (or use fruit canned in juice, drained, for a mixed fruit cup).
## Serving Up the Dietary Guidelines Activity

Directions: The Cafeteria Connection highlighted many ways to incorporate guidance from the *Dietary Guidelines for Americans* into school meal programs. Look at the cafeteria lines below. Select a line and build a lunch that meets the dietary guidance for foods to encourage by putting a checkmark next to your food choices in the menu options.

### Sandwich Central – Made to order Sandwich

<table>
<thead>
<tr>
<th>Bread Choices</th>
<th>Protein Choices</th>
<th>Add-on Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>[] Multigrain Wrap</td>
<td>[] Turkey Breast</td>
<td>[] Romaine</td>
</tr>
<tr>
<td>[] Enriched White Hoagie</td>
<td>[] Hummus</td>
<td>[] Spinach</td>
</tr>
<tr>
<td>[] Whole Wheat Bread</td>
<td>[] Tuna Salad</td>
<td>[] Tomato Slices</td>
</tr>
<tr>
<td>[] Whole-Grain Pita Pocket</td>
<td></td>
<td>[] Cucumber Slices</td>
</tr>
</tbody>
</table>

### Global Vibes – Build a Stir-fry Bowl

<table>
<thead>
<tr>
<th>Grains</th>
<th>Bowl Builders</th>
<th>Protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>[] White Rice</td>
<td>[] Broccoli</td>
<td>[] Teriyaki Chicken</td>
</tr>
<tr>
<td>[] Brown Rice</td>
<td>[] Cauliflower</td>
<td>[] Tofu</td>
</tr>
<tr>
<td></td>
<td>[] Shredded Carrots</td>
<td>[] Lean Beef Strips</td>
</tr>
<tr>
<td></td>
<td>[] Bok Choy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[] Mandarin Oranges</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[] Pineapple Tidbits</td>
<td></td>
</tr>
</tbody>
</table>

### Home Comforts – Pasta-bilities

Choose a Sauce
- [] Marinara Sauce with lean Italian Sausage
- [] Marinara Sauce with lean ground meat and chunks of summer vegetables,
- [] Marinara Sauce with chunks of summer vegetables and cannellini beans

<table>
<thead>
<tr>
<th>Pasta &amp; Grain choices:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[] Whole-grain rotini,</td>
<td>Whole wheat spaghetti,</td>
</tr>
<tr>
<td>[] Whole wheat</td>
<td>Enriched white</td>
</tr>
<tr>
<td></td>
<td>fettuccine noodles</td>
</tr>
<tr>
<td></td>
<td>Whole-grain bread</td>
</tr>
<tr>
<td></td>
<td>stick,</td>
</tr>
<tr>
<td></td>
<td>[] White dinner roll</td>
</tr>
</tbody>
</table>

### All Lunches Served with Choice of Salad –

- [] Garden Vegetable (Romaine, Grape Tomatoes, Cucumbers) or
- [] Spinach Strawberry

Fruit – [] Apples, [] Canned Peach Slices

Choice of Milk - [] Fat-Free Flavored or [] 1% Low Fat
Serving Up the Dietary Guidelines
Activity Answer Key

Directions: The Cafeteria Connection highlighted many ways to incorporate guidance from the *Dietary Guidelines for Americans* in to school meal program. You were to choose from the cafeteria lines build a lunch for a student by putting a checkmark next to the items that are the food choices in the menu options – your goal is to match *dietary guidance* with foods to encourage. Notice how the food selections fit onto MyPlate.

**Sandwich Central – Made to order Sandwich**
Bread choices include Multigrain Wrap, Enriched White Hoagie Roll, and Whole Wheat Bread
- Yes, when a whole grain is the first ingredient, the grain is whole-grain rich.
- Yes, choose 100% whole grain foods often.
- Yes, lean meats and variety in protein choices are encouraged.

**Global line – Build a Stir-fry Bowl**
Combine today’s stir-fry protein (chicken, beef, or tofu)
- Broccoli, Cauliflower, Shredded Carrots, Pineapple, Bok Choy, Kale, White Rice, Brown Rice
- Yes, add vegetables to red/orange pasta sauce or a stir fry bowl to increase vegetables in meals; add a colorful salad to every meal to meet vegetable recommendations.

**Home Comforts – Pasta-bilities**
Marinara Sauce with lean Italian Sausage
Marinara Sauce with lean ground meat and chunks of summer vegetables,
Marinara Sauce with chunks of summer vegetables and cannellini beans
- Pasta choices: Whole-grain rotini, whole wheat spaghetti, enriched white fettuccine noodles
- Whole-grain bread stick, White dinner roll

When more whole grains are included, enriched white products can fit in a healthy diet. Schools will be serving all whole-grain rich grains by the 2014-15 school year.

**All Lunches Served with**
Choice of Salad, Garden Vegetable (Romaine, Grape Tomatoes, Cucumbers) or Spinach Strawberry Salad
Fruit Apple or Canned Peaches
- Choice of Milk (Fat-Free Flavored or 1% Low Fat)
- Yes, Fat-free and Low Fat milk are foods to encourage. The only flavored milk schools can offer is fat-free. Unflavored milk can be fat-free or low fat.
- Yes, serve fruit as sweet dessert or add to stir-fry or salad to get more of this food group to encourage.

- Yes, lean meats and variety in protein choices are encouraged. Portion size is a key concept!
Personal Discovery Assessment
Dining Table Techniques

The Personal Discovery Assessment for Lesson 2 builds on the content of this lesson and the Personal Discovery Assessment completed at the end of Lesson 1.

Look at your completed Personal Discovery Assessment for Lesson 1; find the protein foods group information recorded. If necessary add additional information about how the foods in this group were prepared: fried, sautéed, grilled, or roasted, etc. You will use this information for this Personal Discovery Assessment.

Use this page from your workbook to complete the activity and then return to the online course.

Go to the following website:
https://www.choosemyplate.gov/SuperTracker/default.aspx

1. Type in the words: Fish, battered and fried in the blank link and click on the GO button
2. The next screen will display. Notice the information on solid fats, added sugars, saturated fat, and sodium.

3. Next, type Catfish, steamed or poached in the box and click on the Go button.

4. The next screen will display. Notice the information on solid fats, added sugars, saturated fat, and sodium when comparing the two different methods for preparing fish, battered and fried or steamed.
5. Next, use your Personal Discovery Assessment record from Lesson 1 and see how the cooking method affects these values for your protein food choices. Search the Food-A-Pedia for other options of similar foods to compare to your choices. Make notes of the food choices that would decrease solid fats and sodium; you will use this information when you return to Lesson 2.

My food choices

Food:                      Food:                      Food:
Solid Fats:                Solid Fats:                Solid Fats:
Saturated Fats:            Saturated Fats:          Saturated Fats:
Sodium:                   Sodium:                   Sodium:

Food choices compared to my choices

Food:                      Food:                      Food:
Solid Fats:                Solid Fats:                Solid Fats:
Saturated Fats:            Saturated Fats:          Saturated Fats:
Sodium:                   Sodium:                   Sodium:

What I learned about my choices and preparation methods for protein foods:

New ideas I will try based on what I learned:
Lesson 2 Pre- and Post-Quiz

1. The *Dietary Guidelines for Americans*
   a. apply primarily to individuals with allergies and food sensitivities.
   b. are updated every five years to reflect current research.
   c. do not include children under the age of 12.
   d. are used by medical professionals in clinics and are not for the general population.

2. The *Dietary Guidelines for Americans* are
   a. based only on the needs of healthy individuals not at risk for chronic disease.
   b. revised every ten years based on current research.
   c. intended for Americans ages 2 years and older, including those at increased risk of chronic disease.
   d. required to use the same serving sizes for each of the food groups.

3. Using a food label to compare nutrients in foods from the same food group
   a. shows how to avoid food borne illness.
   b. cannot be done because labels do not indicate food groups.
   c. supports the menu planning concepts of making smart choices quickly and easily.
   d. is required in all school nutrition programs.

4. The MyPlate icon
   a. supports the messages from the *Dietary Guidelines for Americans 2010*.
   b. only includes green leafy vegetables.
   c. shows a simple timeline for a nutrition plan.
   d. does not fit into a healthy lifestyle plan.

5. A food label is required to list ingredients
   a. in alphabetical order.
   b. in order of most to least quantity in the food product.
   c. not commonly known.
   d. only if the manufacturer wants to share the product recipe.

6. Most Americans
   a. get plenty of exercise.
   b. need larger portions of meat in their diets.
   c. can improve their health through regular, enjoyable physical activities.
   d. get enough calcium every day for strong bones.
The Energy Nutrients
Fast Facts About Energy Nutrients

<table>
<thead>
<tr>
<th>Nutrient Information</th>
<th>Protein</th>
<th>Carbohydrate</th>
<th>Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>4 Calories per Gram</td>
<td>4 Calories per Gram</td>
<td>9 Calories per Gram</td>
</tr>
<tr>
<td>Major Functions</td>
<td>Builds and maintains muscles, tissues, and blood cells.</td>
<td>Provides energy and is the body’s preferred energy source.</td>
<td>Transports fat-soluble vitamins.</td>
</tr>
<tr>
<td></td>
<td>Is an essential part of enzymes and hormones that regulate body functions.</td>
<td>Supplies brain and central nervous system with energy.</td>
<td>Provides structure to cell membranes.</td>
</tr>
<tr>
<td></td>
<td>Enhances immune function.</td>
<td>Provides dietary fiber.</td>
<td>Cushions body organs.</td>
</tr>
<tr>
<td></td>
<td>Can be a source of energy, but is not the body’s preferred energy source.</td>
<td>Dietary fiber and starch contribute to satiety.</td>
<td>Contributes to normal nerve and brain development in young children.</td>
</tr>
<tr>
<td></td>
<td>Contributes to satiety, the feeling of fullness that signals the body to stop eating.</td>
<td></td>
<td>Is an essential part of hormones that regulate body functions.</td>
</tr>
<tr>
<td>Types</td>
<td>Complete proteins are found in animal foods.</td>
<td>Simple sugars are found naturally in fruits and milk and are added to foods during processing or preparation.</td>
<td>Monounsaturated fats (MUFAs) are found in canola oil, olive oil, and most nuts.</td>
</tr>
<tr>
<td></td>
<td>Incomplete proteins are found in plant foods.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrient Information</td>
<td>Protein</td>
<td>Carbohydrate</td>
<td>Fat</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------</td>
<td>--------------</td>
<td>-----</td>
</tr>
<tr>
<td><strong>Types</strong></td>
<td>See <em>Did You Know?</em> section for more information.</td>
<td>Starch is a digestible complex carbohydrate found in grains and vegetables. Dietary fiber is an indigestible complex carbohydrate found in plant foods.</td>
<td>Polyunsaturated fats (PUFAs) are found in vegetable oils. Saturated fats (SFAs) are found primarily in animal foods and tropical oils, such as palm oil. Trans fats are found primarily in partially hydrogenated vegetable oils.</td>
</tr>
<tr>
<td><strong>Food Sources</strong></td>
<td>Complete (Animal): Meats, fish, poultry, milk, yogurt, cheese, and eggs Incomplete (Plant): Dried peas and beans, legumes, nuts, and seeds</td>
<td>Simple sugars: Milk, fruits, honey, refined white or brown sugars, high fructose corn syrup, and other processed sugars Starch: Whole grains, vegetables, dried peas and beans Dietary Fiber: Fruits, vegetables, whole grains, dried peas and beans, nuts, and seeds</td>
<td>Liquid sources of fat: Vegetable oils, fish, nuts, and seeds Solid sources of fat: margarine, butter, shortening, lard, meat, poultry, and dairy products Many grains and vegetables have fat added during preparation or processing</td>
</tr>
<tr>
<td><strong>Can the Body Store This Nutrient?</strong></td>
<td>The body uses protein to build tissues and muscles. Protein is not stored, but tissues and muscles can be broken down if protein is not supplied in the diet. Protein is needed regularly in the diet. Excess dietary protein is converted to fat for storage.</td>
<td>The body can store a limited amount of carbohydrate in the muscles and the liver. Excess dietary carbohydrate is converted to fat for storage.</td>
<td>The body stores excess calories from all sources–protein, carbohydrate, and fat–as body fat.</td>
</tr>
<tr>
<td>Did You Know?</td>
<td>Protein</td>
<td>Carbohydrate</td>
<td>Fat</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>--------------</td>
<td>-----</td>
</tr>
<tr>
<td>Did You Know?</td>
<td>Protein is made of amino acids. Essential amino acids are ones the body cannot make and must have in the diet. Protein from animal foods supplies all the essential amino acids and is considered complete protein. Protein from plant sources lacks one or more of the essential amino acids and is considered incomplete protein. However, a mixed diet of plant and animal protein sources supplies all the amino acids needed for good health. Food combinations such as beans and rice, macaroni and cheese, or peanut butter and whole wheat bread are tasty ways to get all the amino acids in the diet.</td>
<td>All carbohydrates are made of different combinations of sugar units. Simple sugars, such as table sugar (sucrose) or the sugar in milk (lactose), have two sugar units linked together. The body can easily break the bond between the two sugar units. Simple sugars digest quickly and provide a quick energy source. The complex carbohydrate starch is made of many sugar units linked together. The body needs more time to break the bonds between the chains of sugar units. Starch digests more slowly and provides a sustained energy source. Carbohydrates are linked to dental caries or cavities. Carbohydrates (simple and complex) start to digest in the mouth. The bacteria in the mouth eat the sugars and produce acid which contributes to tooth decay. Brushing teeth after meals and snacks helps prevent cavities.</td>
<td>Fat is made of fatty acids. Essential fatty acids are ones the body cannot make and must have in the diet. Fat is needed in small amounts for good health. Monounsaturated fatty acids are associated with lower risk of heart disease and cancer. Food sources of these fats are recommended. Polyunsaturated fatty acids are associated with lower risk of heart disease, but at high intake levels, they increase the risk of some types of cancers. Moderate intake of these fats is recommended. Saturated fatty acids and trans fatty acids are associated with increased risk for heart disease. The Dietary Guidelines encourage lower intake of these types of fats. The Dietary Guidelines recommend limiting added fats; limiting solid fats; choosing lean, low fat, and fat-free foods; and shifting sources of dietary fat to fish, nuts, and olive or canola oils.</td>
</tr>
</tbody>
</table>
Resource
Websites for Organizations: Grains, Dairy, Protein Food Groups, Fats, and Sweets

These organizations offer nutrition information and recipes featuring a variety of foods rich in protein, complex carbohydrate, and fat. Look for consumer and school nutrition information.

**DRIED BEANS, PEAS, AND LENTILS**
Idaho Bean Commission
bean.idaho.gov

Michigan Bean Commission
www.michiganbean.org

United Soy Bean Board
www.unitedsoybean.org

USA Dry Peas, Lentils & Chickpeas
www.pea-lentil.com

US Dry Bean Council
www.beansforhealth.org

**GRAINS**
Barley Foods Council
www.barleyfoods.org

National Pasta Association
www.ilovepasta.org

International Wild Rice Association
www.wildrice.org

USA Rice Federation
www.usarice.com

Wheat Foods Council
www.wheatfoods.org

Whole Grains Council
www.wholegrainscouncil.org

**EGGS**
American Egg Board
www.aeb.org

**FISH AND SEAFOOD**
Alaska Seafood Marketing Institute
www.alaskaseafood.org

Salmon of the Americas
www.salmonoftheamericas.com

Seafood Information
www.seafood.com

**MEAT AND POULTRY**
National Cattlemen’s Beef Association
www.beef.org

National Chicken Council
www.eatchicken.com

National Pork Producers Council
www.nppc.org
MILK, CHEESE, AND YOGURT
National Dairy Council
www.nationaldairycouncil.org
and related link
www.ilovecheese.com

NUTS
Almond Board of California
www.almondboard.com

Peanut Advisory Board
www.peanutbutterlovers.com

Walnut Marketing Board
www.walnuts.org

OILS, DRESSINGS,
AND SPREADS
American Dairy Association
www.dairyinfo.com

Association for Dressings & Sauces
www.dressings-sauces.org

California Olive Committee
www.calolive.org

National Association of Margarine
Manufacturers
www.butteryspreads.org

SWEETS AND SUGARS
National Honey Board
www.honey.com

Sugar Association, Inc.
www.sugar.org
Fats are listed by total grams and by type of fat. Use total grams of fat to keep daily fat intake balanced for the day. See the chart at the bottom of the panel for recommended amounts of fat and saturated fat.

Total carbohydrate includes starch, sugars, and dietary fiber. Some labels list soluble and insoluble fiber. To determine how much complex carbohydrate is in a serving, subtract the amount of fiber and sugars from the total carbohydrate grams. The remainder is starch, a complex carbohydrate.

Check the ingredient label to find out if sugars are natural from milk or fruit or added sugars from corn syrup, dextrose, or other sweeteners. This number includes natural and added sugars in one total.

Protein is listed below Total Carbohydrate. Check the ingredient listing for animal or plant sources.

### Nutrition Facts

**Serving Size 1 cup (45g)**  
**Servings per Container About 8**

**Amount per Serving**

<table>
<thead>
<tr>
<th>Calorie Information</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>230</td>
</tr>
<tr>
<td>Calories from Fat</td>
<td>90</td>
</tr>
<tr>
<td>% Daily Value*</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Total Fat**  
- Saturated Fat 2g
- Trans Fat 2g
- Polyunsaturated Fat 4g
- Monounsaturated Fat 4g

**Cholesterol** 20mg  
*8%*

**Sodium** 95mg  
*4%*

**Potassium** 170mg  
*4%*

**Total Carbohydrate** 25g  
*8%*

- Dietary Fiber 6g
- Sugars 8g

**Protein** 10g

- Vitamin A 30%
- Vitamin C 10%
- Calcium 21%
- Iron 5%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

<table>
<thead>
<tr>
<th>Calories</th>
<th>2,000</th>
<th>2,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat less than</td>
<td>65g</td>
<td>80g</td>
</tr>
<tr>
<td>Sat Fat less than</td>
<td>20g</td>
<td>25g</td>
</tr>
<tr>
<td>Cholesterol less than</td>
<td>300mg</td>
<td>300 mg</td>
</tr>
<tr>
<td>Sodium less than</td>
<td>2,400mg</td>
<td>2,400 mg</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>300g</td>
<td>375g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>25g</td>
<td>30g</td>
</tr>
</tbody>
</table>

**Calories per gram:**  
- Fat 9  
- Carbohydrate 4  
- Protein 4

**INGREDIENTS:** The ingredients in the product are listed here. The food contains the most of the first item listed. It has the least of the last item listed.

Manufacturer name and address appear here.
A balanced meal helps a student feel full for several hours. Conversely, the student who chooses a soda and candy bar for a meal will feel hungry sooner. Hunger pains can distract a student from learning. The brain needs a steady supply of fuel to focus attention, solve problems, and learn. Balanced meals provide carbohydrate for energy, protein for growing bodies, and fat for energy and essential body needs.

Energy balance is a key feature of school meals. Meals should provide a mix of protein, carbohydrate, and fat. Look at the typical menus below.

**Breakfast**
- Whole-grain cereal
- Banana
- Whole wheat toast with butter
- Low fat milk

**Lunch**
- Turkey and Red Bean Chili stuffed baked potato with low fat shredded cheese
- Fresh vegetables with fat-free ranch dip
- Canned apricots packed in juice
- Whole wheat roll
- Low fat milk

**These meals provide:**
- Simple carbohydrates from fruit and milk
- Complex carbohydrates and dietary fiber from grains and starchy vegetables
- Protein from milk, cheese, and meat and beans
- Fat from meat, milk, cheese, and butter
- Other nutrients and energy needed for growth and work

School meals are required to provide the energy and nutrient needs of active, growing students. Did you know that the average, active 6th grade student, male or female, requires more calories, protein, carbohydrate, and fat than does an inactive adult woman? Adults frequently need fewer calories than active, growing children. The school meals that meet the calorie needs of children may provide more calories than adults need. Adults that eat school meals have the option to choose smaller portions if requested.
Video Check for Understanding
Interactive Activity

Directions: After watching the video, read the following statements and decide which statements are true and which are false. If the statement is false, what changes would you make to correct the statement and make it true?

_______ 1. Adults may need as many calories as growing children or teens especially if they are very active physically. Many adults are involved in intensive physical activity today. School meals meet the calorie needs of growing children.

_______ 2. May I offer you larger portions to meet your calorie needs? Be sure to select vegetables, which are low in calories. We offer many choices weekly.

_______ 3. Adults cannot enjoy a school meal without gaining weight. Just remember adults’ energy needs are often more than the meal provides. Teachers and other school staff could ask for larger portions, eat more of the food served, and/or decrease their physical activity.

_______ 4. We encourage adults to participate at breakfast and lunch. When adults enjoy coming to the cafeteria, students have a positive adult role model to follow. Let me know how I can help you select a meal that meets your needs.
Video Check for Understanding
Interactive Activity
Answer Key

**Directions:** After watching the video, read the following statements and decide which statements are true and which are false. If the statement is false, what changes would you make to correct the statement and make it true?

___ F ___ 1. Adults may **not** need as many calories as growing children or teens especially **if** they are very active physically. Many Few adults are involved in intensive physical activity today. School meals meet the calorie needs of growing children.

___ F ___ 2. May I offer you larger smaller portions to meet your calorie needs? Be sure to select vegetables, which are low in calories. We offer many choices weekly.

___ F ___ 3. Adults **cannot** can enjoy a school meal without gaining weight. Just remember adults’ energy needs are often more less than the meal provides. Teachers and other school staff could ask for larger smaller portions, eat more less of the food served, and/or decrease increase their physical activity.

___ T ___ 4. We encourage adults to participate at breakfast and lunch. When adults enjoy coming to the cafeteria, students have a positive adult role model to follow. Let me know how I can help you select a meal that meets your needs.
Nutrition Nuggets
Food Allergies, Intolerances, and Adverse Reactions

Do you know the difference between a food allergy, a food intolerance, and an adverse reaction to a food?

Food Allergy
Food allergies are the body’s response to a protein in a food. A medical doctor must diagnose food allergies. Eggs, fish, milk, peanuts, shellfish, soy, tree nuts, and wheat are the most common allergy-producing foods. A person with a food allergy needs to avoid eating that food or foods made from it. Food labels provide ingredient listings. It is important to check labels for possible allergens. For example, someone allergic to eggs needs to avoid albumen, an egg protein used in food processing. To avoid eating foods with the protein gluten in them, look for wheat, barley, semolina, rye, durum, or any other wheat product on the label. If the food is gluten-free the label will state that the food is gluten-free.

Allergy symptoms range from skin rashes and sneezing, to nausea and vomiting, to life threatening shock. Anaphylactic shock is the most severe reaction to an allergy. If a person has a severe allergy, he or she should keep special medicines on hand in case an unexpected intake of the food occurs.

Health professionals can help you plan and provide meals for students with severe food allergies.

Food Intolerance
A food intolerance means there is difficulty digesting a food. For example, some people do not have enough lactase in their digestive tracts. Lactase is the digestive enzyme that digests lactose, the sugar in milk (a carbohydrate). This condition is called lactose intolerance. It is not an allergic reaction. A person with lactose intolerance can have symptoms of digestive distress after eating dairy products. Both the type and severity of symptoms can vary greatly from person to person. It is possible to reduce the symptoms of lactose intolerance and keep calcium-rich milk products in the diet. Drink smaller amounts of milk with a meal, eat dairy foods lower in lactose such as cheese and yogurt, and use lactase enzymes to predigest milk’s lactose. In extreme cases, a person may have to avoid all sources of lactose and rely on nondairy sources of calcium and other nutrients. People who are very sensitive to lactose need to read ingredient lists on food packages carefully.

A health professional can help you plan and provide meals for students with food intolerances.

Adverse Food Reaction
Suppose a person ate a food an hour before becoming ill due to the flu. The experience might create a connection in the person’s mind between the food and the illness, even though the food didn’t cause the illness. In the future, just smelling the food might make the person feel ill. This reaction is an adverse reaction to a food. Adverse food reactions are very individual. These food reactions are neither an allergy nor intolerance.
Personal Discovery Assessment
Pantry Patrol

Most Americans need help finding whole grains. Look around your cupboards and pantry for these tasty treats from nature’s bounty. Put a check mark next to the grains you regularly eat. If you don’t have many checks, take some extra time at the store and look for these grains. Many are available in bulk food sections, health food sections, and natural food stores. Make a plan to try a grain you don’t usually eat. Treat your taste buds to a new flavor. Give your body a nutrition boost with a new whole grain each week.

Amaranth. This grain, native to South America, is a great addition to pilaf or any other dish featuring rice. Amaranth flour is also available and can be added to bread recipes.

Barley. This versatile grain is rich in soluble fiber. Look for quick cooking barley in stores. Try it in pilaf and add it to soups. Cook up a breakfast treat of barley with dried fruit. Try rolled barley in place of oats in recipes.

Buckwheat. We eat buckwheat like a grain, but it is really an herb. Several different forms are available.
- Buckwheat groats can be cooked and used like rice.
- Kasha or roasted groats have a nutty flavor; add some to stuffing.
- Buckwheat flour is used for pancakes and quick breads.

Corn. While corn is most often used as a vegetable, it is truly a grain. Cornbread, made with cornmeal, is a tasty alternative to other breads. Also, try corn tortillas for a change of pace from flour tortillas. Look for “whole corn” as the first ingredient listed.

Flaxseed. Flaxseed is another food used like a grain that is really a seed. Be sure to use ground flaxseed. The body cannot digest the hard outer shell so all of flax’s goodness could pass through the body unused. That would be a shame because flaxseed is a rich source of a type of fat that protects against heart disease. Add ground, milled flaxseed to bread and muffin recipes, mix it with whole wheat bread crumbs for a flavorful breading, or sprinkle some on salads or yogurt. While flax is not whole grain, it is another way to increase variety when added to whole grains.

Millet. This grain is frequently used as bird seed in America, but it is a delicious, hearty grain. Cook millet and use in recipes calling for rice, or serve it as a hot breakfast cereal. Millet flour can be added to baked goods.

Oats. This grain is one of the most popular whole grains in the diet. Oats are for more than a warm bowl of cereal in the morning. Rolled oats are great in breads, meatloaf and other patty-type entrees, and cookies, of course!
Quinoa. Quinoa (keen’wah) is the seed of a fruit, but is used like a grain. This rare plant food provides all the essential amino acids so it is a complete protein source. It cooks in half the time of rice and is transparent when cooked. Ivory colored quinoa has a delicate flavor. Some types of quinoa are stronger flavored. Try quinoa in dishes that call for rice, as a grain base to top with stew, or in a mixture with other grains for a new twist on breakfast cereal.

Rye. Those who enjoy pumpernickel bread are familiar with this grain. Add rye flour to bread recipes. Be sure to add some extra gluten, the protein that helps give yeast breads shape, to have a successful product.

Whole Wheat. The grain that is a mainstay in the American diet is available in many more forms than bread and flour.

- **Bulgur** (Bulghur or bulgar). This is a precooked form of crushed, hulled wheat berries. This quick cooking grain is popular in Middle Eastern cuisine. Go beyond tabbouleh; try bulgur as a breakfast cereal or in pilaf.
- **Cracked Wheat**. Cracked wheat is similar to bulgur but it is not cooked before packaging, so it does take a bit longer to cook.
- **Wheat Berries**. The whole, ripe wheat kernel has a wonderful, nutty flavor. Wheat berries take a while to cook but are worth the effort. Cooked wheat berries are a great addition to soups, stews, and casseroles. Try them as a hot cereal with fruit. Freeze small portions for easy to use recipe amounts.
- **Wheat Germ**. Add wheat germ to whole wheat breadcrumbs for a great coating mix, spoon a tablespoon or two into yogurt and fruit, or sprinkle into cooked cereals. Wheat germ is not a whole grain, but a great way to add part of the whole grain back into foods.
- **Whole Wheat Bread**. Look for 100% whole wheat on the label. “Wheat” breads are frequently not whole wheat but caramel colored, enriched white breads.
- **Whole Wheat Flour**. Check out the many varieties available in stores including whole wheat pastry flour for cookies, muffins, and pancakes. Whole wheat flours for bread come in different types. Follow the manufacturers’ instructions for additional gluten or baking soda for successful home baked breads.
- **Whole Wheat Pasta**. Many varieties of whole wheat pastas are on store shelves. Pasta made from whole wheat stands up to flavorful sauces and other ingredients.

Whole grains I found at my local store:______________________________________________

Four whole grains I am going to try in the next few weeks:
1.______________________________________________
2.______________________________________________
3.______________________________________________
4.______________________________________________

55
Lesson 3 Pre- and Post-Quiz

1. Protein is more important than carbohydrate in the diet.
   a. True, because protein does not add body weight.
   b. False, because carbohydrate has less calories than protein.
   c. False, because both are essential and perform different roles.
   d. True, because protein needs are higher than carbohydrate needs.

2. Which is not accurate about legumes?
   a. They provide protein.
   b. They provide saturated fat.
   c. They provide complex carbohydrate.
   d. They provide dietary fiber.

3. If the diet does not supply carbohydrate, the body will
   a. make it from dietary protein or body protein.
   b. increase insulin levels to get more carbohydrate.
   c. convert fiber in carbohydrate.
   d. use fat to increase blood sugar amounts.

4. The amount of calories per gram for energy nutrients is ____ for protein, ____ for carbohydrate and ____ for fat.
   a. 20 percent, 30 percent, and 50 percent
   b. 100 calories, 150 calories, and 300 calories.
   c. 10 mg, 10 mg, and 90 mg
   d. 4 calories, 4 calories, and 9 calories

5. Fat functions in the body include all but one of the following:
   a. It cushions the organs.
   b. It is found in every cell in the body.
   c. It provides energy.
   d. It is a component of enzymes.
Simple Sugars in Simple Terms
Sources of Simple Sugars Activity

For each category listed on the note card below, list three or four foods that fit each category of simple sugars. An example for each category is listed to get you started.

<table>
<thead>
<tr>
<th>Sources of sugars in the diet</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweeteners: <em>Table sugar (sucrose)</em>,</td>
<td></td>
</tr>
</tbody>
</table>

| Foods with added sugars: | Snack crackers, cookies, |

| Beverages with added sugars: | *Powdered lemon flavored drink mix*, |

| Foods with naturally occurring sugars: | *Plain yogurt*, |
Sources of Simple Sugars Activity
Sample Card for Betty Baker

Betty Baker is your partner for this activity; here is her list of foods.

<table>
<thead>
<tr>
<th>Sources of sugars in the diet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweeteners: <em>Table sugar (sucrose)</em>, <em>Honey</em>, <em>Brown sugar</em>, <em>Maple syrup</em>, <em>Powdered sugar</em>, <em>Agave syrup</em>, <em>raw sugar</em>, <em>white sugar</em></td>
</tr>
</tbody>
</table>

| Foods with added sugars: *Snack crackers, cookies*, *Baked desserts*, *Some brands of peanut butter*, *Ketchup*, *Some varieties of pasta sauce*, *Breakfast cereals*, *Canned fruits* |

| Beverages with added sugars: *Powdered lemon flavored drink mix*, *Soft drinks*, *Sports beverages*, *Coffee drinks*, *Sweet tea* |

| Foods with naturally occurring sugars: *Plain yogurt*, *Milk*, *Fruits*, *Fruit juices*, *Some vegetables such as sweet potatoes, pumpkin, and carrots* |
Nutrition Nuggets
As Simple as One, Two, Three, or More!

Most carbohydrates are plant based foods. Plants use sunshine and basic elements in the soil in a chemical process (photosynthesis) to make energy in the form of sugars. Plants convert sugars to starches for storage.

Female mammals can produce milk, which contains a type of sugar (lactose) unique to animals.

One
All carbohydrates, simple and complex, are made of molecules called saccharides (sugars). A single unit is called a monosaccharide, which means one (mono) sugar unit (saccharide). The three single sugar units are
  1) Glucose (the type that circulates through the body in the blood supply),
  2) Fructose (fruit sugar), and
  3) Galactose (only found in milk).

Two
Most of the simple sugars in foods are two (di) units joined, or a disaccharide. There are three disaccharides.
  1) Glucose + Fructose = Sucrose (known as table sugar),
  2) Glucose + Galactose = Lactose (the sugar naturally found in milk), and
  3) Glucose + Glucose = Maltose (known as malt sugar).

Three or More
Complex carbohydrates are called polysaccharides. Complex carbohydrates are many (poly) units linked together. Starches can be hundreds of units joined.

The body breaks down all carbohydrates, simple and complex, into single units. The glucose from milk, table sugar, or starch is all the same. The body changes fructose and galactose into glucose. Since all glucose units are the same, cells of the body cannot tell what food supplied the glucose.

The body does react to how quickly glucose is absorbed into the blood stream. A simple sugar’s single bond breaks easily; units are absorbed quickly. The many bonds of a starchy food take longer to break apart. Fruit’s fructose and milk’s galactose are changed into glucose and enter the bloodstream at a slower rate.

Fruits, vegetables, whole grains, and legumes provide the body with much needed fiber, vitamins, and minerals. Pastries, desserts, candies, and sweetened beverages often lack essential nutrients. The glucose in all foods is identical; the bounty of nutrients – or lack of needed nutrients carbohydrate rich foods provide is the big difference.
Added Sugars and Food Labels

The sugars listed on food labels are similar to the glucose units in the body. The label lists all sugars, natural and added, in one amount.

Foods with fiber, vitamins, and minerals often provide naturally occurring sugar from fruits, vegetables, some grains, and milk products. These are the health promoters in foods.

The ingredients are listed in order of most to least.

Look for sources of sugars and other sweeteners, usually words that end in the letters “ose”, such as sucrose.

The following are common added sugars:

Sugar or brown sugar, sucrose, dextrose, fructose, high fructose corn syrup, corn sweetener, concentrated fruit juices, invert sugar, honey, malt syrup, maltose, and molasses.

Common Foods withAdded Sugars

Regular soft drinks
Cakes
Pies
Cookies
Flavored milks
Ketchup
Ice creams
Barbecue
Fruit drinks
Flavored yogurts
Sweet’n sour
Candies
Coffee drinks
Other sauces
Sweet rolls

Use these areas of the food label to look for added sugars

Ingredient listing

Sugars in grams (lists both combined, but gives indication if food provides sugars)

Product name or description, such as sweetened oat cereal.
Simple Facts about Sugars and Health

Dental Caries
Dental caries (cavities) are the only disease that sugars of any source are proven to cause. The mouth’s bacteria feed on sugars in foods and create acids. The acids lead to tooth decay. Caramels (added sugars) or raisins (natural sugars) are two examples of sticky foods that can promote cavities. Because saliva starts to digest starchy foods in the mouth, breads and crackers can also lead to tooth decay.

The best approach to dental health is to
1) eat a nutrient rich diet,
2) brush teeth after meals and snacks,
3) limit the time carbohydrates of any source are in contact with the teeth, and
4) floss teeth daily.

Diabetes
A common myth is that eating sugar causes a person to develop diabetes. This is not true. The exact causes of the two types of diabetes are not fully understood, although risk factors have been determined. When we eat foods, the pancreas produces insulin so our body can use the energy (glucose) from foods. People with diabetes do not produce enough, or sometimes any, insulin. The result is high levels of blood sugar, which create health problems.

People with type 1 diabetes do not produce any insulin. They require insulin injections to help their bodies use the energy in foods. Type 1 diabetes often occurs in children. People with type 1 diabetes match the amount of carbohydrate (simple and complex) in their daily meals with their insulin injections.

People with type 2 diabetes make too little insulin or insulin that does not work well. Type 2 diabetes was once common only in adults. Today, teens and children have type 2 diabetes at increased rates. Being overweight or obese is a major risk factor for developing type 2 diabetes. Symptoms often improve with sustained weight loss, increased physical activity, and a quality diet. People with type 2 diabetes plan the amount of carbohydrate they eat each day even though they may not need insulin injections.

Hyperactivity
It is a myth that sugar causes children to be hyperactive. Scientific research does not support this myth. In fact, some studies show carbohydrate rich foods are calming. The fun and frolic seen at special events may have little to do with serving foods that contain sugars. Parties and celebrations are exciting events, usually with plenty of sweets. Children rewarded with sweets for finishing a task might be excited to receive a treat.

Weight Issues
Sugars are a source of calories. Many foods rich in simple sugars are also sources of fat. Fat provides slightly more than twice the calories of carbohydrate. While foods rich in sugars may play a role in weight gain, sugar-sweetened beverage intake is associated with increased weight in children and adults.
Calories are the primary factor in weight gain. Calories play two different roles. First, a sedentary person burns fewer calories in daily activities. Modern life means our bodies need less energy unless we are active. Second, calories eaten beyond daily needs are stored and create weight gain. Our food supply is plentiful; therefore, it is easy to eat an excess of calories.

Food patterns over time, not individual foods, shape health outcomes. Sweeteners can be part of a balanced, nutrient rich diet. The keys to healthful weight are food intake and activity levels. Balance energy intake (calories) with output (physical activity) for good health and stable weight. To lose weight, burn more calories, eat fewer calories, or both! The goal is to eat more foods with complex carbohydrates and natural sugars and less added simple sugars.
Personal Discovery Assessment
A Matter of Choice

Simple sugars are often found in treats and sweet foods. MyPlate calls these foods sources empty calories. About 90% of daily calories are needed to meet nutrition needs. The remaining calories can be snacks, sweets, and treats.

1. For the foods listed below, note the total calories of these sweet treats. Look at the sample menu on page 66. Which foods from below would you choose to add to that menu? Circle your choices from the list below.

<table>
<thead>
<tr>
<th>Food Portion</th>
<th>Calories</th>
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<th>Calories</th>
<th>Food Portion</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 chocolate drop</td>
<td>25</td>
<td>1 12-ounce lemon lime soda</td>
<td>150</td>
<td>1 tsp sugar</td>
<td>15</td>
</tr>
<tr>
<td>1 slice cherry pie</td>
<td>390</td>
<td>1.5 ounce crisp rice chocolate bar</td>
<td>220</td>
<td>1 4-inch sugar cookie</td>
<td>120</td>
</tr>
<tr>
<td>4 large gum drops</td>
<td>160</td>
<td>1/12 slice of frosted cake</td>
<td>400</td>
<td>1/4 cup sweet &amp; sour sauce</td>
<td>60</td>
</tr>
</tbody>
</table>

How many total calories did you choose to add?

2. Look again at the MyPlate Meal Pattern and sample menu on page 66.

How many calories are suggested for your age group?

How many empty calories from sweets and treats are suggested for your age group?

How do your choices (circled above) compare to these calorie guides?

Here are two ideas to help balance calories from sweets and treats. What ideas do you have?

1. Take a brisk walk several times a week.
2. Take smaller portions of sweets.
3. 
4. 
5. 

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Personal Discovery Assessment – Check Your Choices at Food-A-Pedia
List your favorite sweets in the blanks provided. Use Food-A-Pedia to find the empty calories in a serving (use directions from Lesson 2 for Food-A-Pedia to refresh your memory if needed).

<table>
<thead>
<tr>
<th>Food Portion</th>
<th>Empty Calories</th>
<th>Added Sugars</th>
<th>Added</th>
<th>Fat</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

How do these foods fit into your healthy eating plan?

Use the Food-A-Pedia to calculate the number of grams and the number of calories of added sugar based on your Personal Discovery Assessment.

<table>
<thead>
<tr>
<th>Food Portion</th>
<th># grams</th>
<th># of calories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Do you need to decrease the amount of added simple sugars you take in daily?

Set a goal to decrease the amount of simple sugar intake and list three ways in which you plan to accomplish this goal.

_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
Sample Menu for MyPlate Meal Pattern

**Breakfast**
1 cup cooked oatmeal  
½ ounce toasted walnuts, chopped  
6 dried apricot halves, chopped  
1 cup fat-free milk

**Snack**
8 ounces nonfat, sugar free lemon yogurt  
½ cup blueberries (unsweetened frozen, thawed)

**Lunch**
Tuna Sandwich
2 ounces water packed tuna  
1 tablespoon light mayonnaise  
2 ounces low fat Cheddar cheese  
3 leaves Boston Bibb lettuce  
2 slices whole wheat bread  
1 small apple  
Hot tea or coffee, plain

**Dinner**
Stir Fry and Rice
3 ounces lean beef, broiled  
3/4 cup broccoli florets  
3/4 cup cauliflower pieces  
3/4 cup carrot coins  
1 cup cooked brown rice  
1 medium orange  
1 cup fat-free milk

**MyPlate Meal Pattern**
For women with less than 30 minutes of intense physical activity each day.

<table>
<thead>
<tr>
<th>Group</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>5-6 ounce equivalents</td>
</tr>
<tr>
<td>Vegetables</td>
<td>2-2 1/2 cups</td>
</tr>
<tr>
<td>Fruits</td>
<td>1 1/2 cups</td>
</tr>
<tr>
<td>Dairy</td>
<td>3 cups</td>
</tr>
<tr>
<td>Protein Foods</td>
<td>5 ounce equivalents</td>
</tr>
<tr>
<td>Oils</td>
<td>5 tsp</td>
</tr>
</tbody>
</table>

* Total calorie needs are based on activity levels, sex, and age. Women over 51 years old need about 200 fewer calories to maintain body weight than a woman under 50.

**Choose lean, low fat choices from each food group with few added fats or sugars. The day’s menu above meets the food group meal pattern totals for about 1450 calories.

For better health, eat better foods and add a brisk 2 mile walk to your daily routine. It is a great way to burn about 200 calories. Walk for weight loss, for better health, or enjoyment.
How to create your own Daily Food Plan – As Simple as 1, 2, 3


2. Click on the Daily Food Plan link.

3. Fill in your personal information.

Cafeteria Connection
School Solutions

School meals provide nutrient rich foods. Fruits and milk provide most of the natural simple sugars in school meals. School meals strive for lower levels of added sugars, though federal guidelines do not list specific amounts. Meals planned to meet federal requirements are more likely to be moderate in sugars than á la carte or vending machine sales.

All schools participating in the National School Lunch Program must have a school wellness policy as outlined in the Reauthorization Act of 2004 and Healthy, Hungry Free Kids Act of 2010. These policies cover for the entire district, not just food service. Policies on food choices should include all foods available on campus: the cafeteria, vending, schools stores, and classroom activities.

School nutrition staff has a role to play in the cafeteria, on the school wellness committee, and in the larger community.

1. They help administrators, educators, and parents/community volunteers plan reasonable policies.
2. They speak out on ways to enhance student health and academic growth while balancing nutrients of excess in the diet, including added simple sugars.

In the Cafeteria

1. Follow standardized recipes. An extra “dopple” of glaze on a cinnamon roll adds calories from simple sugars.
2. Different dessert options. A dessert at every meal sends a message that the meal is not complete without a sweet. Focus on fruits as a sweet ending for a meal. New meal patterns limit grain-based desserts to two per week within the grain serving maximum. Canned fruits must be in light syrup or juice; dried and frozen fruit must be without added sugar.
3. Revamp recipes. Revise recipes and reduce added sweeteners in foods prepared onsite. Learn new ways to bake with less added sugars.
4. Develop specifications for prepared foods to limit the sugar content.
5. Got plain milk? While children enjoy chocolate and other flavored milks, promote plain milk, too. New meal patterns allow only fat-free milk to be flavored to help limit empty calories.

On School Wellness Committees

1. Educate on the value of reimbursable meals over á la carte sales.
2. Be the voice of balanced nutrition.
3. Help local wellness committees make informed choices about all foods available at school. Find items in smaller portions and alternatives to nutrient limited sweets and snacks.
4. Serve as a role model for healthy foods.
In the Larger Community:
1. Help parents make the best nutrition choices for their children. Provide school websites and newsletters with helpful hints.
2. Be involved with back to school and parent education events.
3. Work with the district’s media contact and the local media. Provide timely tips and fast facts on children’s nutrition issues.

The family’s role in shaping eating habits is important. Recent studies find parents – not peers – had more influence on children’s intake of sugary drinks, and students with more visits to fast food restaurants and school vending machines had higher sugary drink intake.

Parents are powerful influences on their children’s choices. Families choose beverages for at home and away from home meals. Children learn how to spend their own money. Everyone needs to buy into food and beverages with less added sugars.

Putting School Solutions into Action:

What are two ways school meals help reduce added sugars in the diets of youth?

1. _____________________________________________________________________
   _____________________________________________________________________

2. _____________________________________________________________________
   _____________________________________________________________________

What are two ways you could improve the wellness policy at your school?

1. _____________________________________________________________________
   _____________________________________________________________________

2. _____________________________________________________________________
   _____________________________________________________________________

Everyone can help make wellness a priority at school. Share these ideas with your supervisor.
Non-nutritive sweeteners are sweet tasting compounds. They are hundreds of times sweeter than table sugar. Small amounts of these sweeteners replace larger amounts of conventional sweeteners in food products. The result is a sweet taste with few added calories.

Each non-nutritive sweetener is different. For example, some can be used in baking while others lose their sweet taste when exposed to high temperatures. A lingering aftertaste may occur with some sweeteners.

The use of non-nutritive sweeteners is a personal choice. Non-nutritive sweeteners make it possible to include sweet tasting foods in low calorie diets and diabetic eating plans.

Remember, foods made with non-nutritive sweeteners need to be part of a balanced diet. It is not healthful to have unlimited amounts of a food or beverage just because it is “sugar free.”

In the United States, five non-nutritive sweeteners are approved for use in foods, beverages, and medicines: acesulfame K., aspartame, neotame, saccharin, and sucralose.

**Acesulfame K Facts:**
- Use to sweeten
  - Beverages
  - Baked and pasteurized foods
  - Candies and medicines, such as cough drops
- Not digested; it is excreted unchanged
- About 200 times sweeter than sugar
- Safe for diabetic diets
- Does not promote tooth decay

**Aspartame Facts:**
- Made of two amino acids—aspartic acid and phenylalanine
- Digested and metabolized as aspartic acid, phenylalanine, and a small amount of methanol
- Warning that product contains phenylalanine must be on the food label
- About 200 times sweeter than sugar
- Safe for diabetic diets
- Does not promote tooth decay
- Does not retain sweet taste after high temperatures—not good for baking

*Note: Individuals with Phenylketonuria (PKU) should not use aspartame because they are unable to metabolize the amino acid phenylalanine.*
Neotame Facts:
- Made of two amino acids—aspartic acid and phenylalanine; due to small amounts used, PKU labeling is not required
- Sweetest of the nonnutritive sweeteners; 7,000 – 13,000 times sweeter than sugar
- Stays sweet at high temperatures; approved for baking and cooking
- Safe for diabetic diets

Saccharin Facts:
- Oldest of the non-nutritive sweeteners
- 300 – 700 time sweeter than sugar
- Safe for diabetic diets
- May reduce the risk of tooth decay
- Heat stable; suitable for baking, cooking, and canning/preserving

Sucralose Facts:
- Made from table sugar (sucrose)
- Not digested or absorbed
- Heat stable
- Used to sweeten
  - Beverages, cereals, baked items, medical foods, candies

Sucralose is the exception to the “ose” rule to find sources of added caloric sweeteners in a product ingredient list. Any grams of sugar listed on the nutrition facts label of products sweetened with sucralose are from other ingredients, not the sucralose.

Other Sweeteners

Sugar Alcohols Facts:
- Neither sugar or alcohol; another form of carbohydrate
- Include sorbitol, mannitol, and maltitol
- Provide calories, but fewer than sugar
- Potential laxative effect in large amounts

Foods with sugar alcohols may use the term “sugar free” AND must state “not a calorie free food” on the label. Many food products use sugar alcohols and non-nutritive sweeteners combined. Sugar free chewing gums are sweetened with sugar alcohols since they do not promote tooth decay.

For more information on non-nutritive sweeteners, visit the Calorie Control Council’s website at www.caloriecontrol.org.
Lesson 4 Pre- and Post-Quiz

1. A food label is required to
   a. list natural and added sugars separately.
   b. list all added sugars together in the ingredient list no matter how much of each is in the product.
   c. list any non-nutritive sweeteners in grams under the Carbohydrate category, after Fiber on the Nutrition Facts panel
   d. follow specific wording when claims about sugar in a food product are made.

2. Which health concerns are directly linked to eating carbohydrate, both simple sugars and starches?
   a. High blood pressure and diabetes
   b. Improved kidney function
   c. Cavities or dental caries
   d. Sinusitis

3. Food sources of simple sugars do not include
   a. apples and carrots.
   b. soft drinks, candies, and desserts.
   c. milk and yogurt.
   d. egg whites and vegetable oils.

4. Complex carbohydrates or starches
   a. are made of hundreds of fructose units.
   b. are digested and absorbed more slowly than simple sugars.
   c. are lower in calories than simple sugars.
   d. include soluble fiber.

5. Health experts recommend limiting added sugars in the diet to
   a. two teaspoons daily.
   b. 10% of total calorie needs.
   c. no limit as long as foods eaten are before noon.
   d. no limit as long as activity levels are above average.
Focus on Fats
**Fats and Oils**

On the line below each word, write as many examples of fats and oils as come to mind.

**Fats** (solid at room temperature)

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**Oils** (liquid at room temperature)

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Resource Alphabet Letters, Labels, and Lipids

The word lipid refers to fats and oils. This resource explains fats and oils in the diet and lipids in the body. The last page explains fats on a food label.

Lipids in the diet

Lipids solid at room temperature are called fats. Oils are lipids that are liquid at room temperature. All lipids are concentrated sources of energy, or calories. A gram of fat or oil provides 9 calories; an equal weight of pure protein or carbohydrate provides 4 calories. Both fats and oils are made up of different fatty acids, similar to how proteins are made up of different amino acids.

Every fat and oil is made of more than one type of fatty acid. Fats and oils are grouped by whichever fatty acid makes up most of the fatty acids in a food. For example, if the food contains mostly saturated fatty acids, the food is then referred to as a saturated fat-rich food.

Fatty acids are divided into two groups: essential and nonessential. If the body cannot make the fatty acid from another source, it is called essential. Nonessential fatty acids can be made from other fatty acids by the body. Two fatty acids, alpha linoleic acid (ALA) and linoleic acid (LA), are essential fatty acids. Humans must get these fats in the diet. We cannot make these vital fats from other dietary fats.

Types of fatty acids

Monounsaturated fats (MUFAs) are the primary fatty acids found in olive or canola oils, tree nuts such as walnuts or almonds (and oils made from these nuts), peanuts, and avocados. Diets from the Mediterranean area are rich in MUFAs.

Polyunsaturated fats (PUFAs) are major fatty acids found in corn, soybean, or safflower oil and fish.

Saturated fatty acids (SFAs) are solid at room temperature. Animal fats, such as beef fat, lard, and butter are examples of foods with the most SFAs. Some plant oils, such as coconut or palm oil are also sources of SFAs.

Trans fatty acids (TFAs) are made when hydrogen is added to vegetable oils in a processing plant. The process changes polyunsaturated oils to partially saturated fats. Shortening, stick margarine, and some frying oils are examples of TFAs. Food labels will list partially hydrogenated vegetable oils as an ingredient. Snack crackers, chips, cookies, and fried foods are often sources of trans fatty acids.

Cholesterol in the diet is only found in animal based foods. Dietary cholesterol can raise blood cholesterol in some people. The total amount and types of fats eaten may impact a person’s blood cholesterol levels. In general, saturated and trans fatty acids increase blood cholesterol levels. Mono and polyunsaturated fats are linked to lower blood cholesterol levels.
Fatty Acids – All Greek to Me

Omega is a letter in the Greek alphabet. Some fatty acids are grouped using this letter and a number. The groups are omega-3, omega-6, and omega-9.

Omega-3 Fatty Acids

Omega-3 fatty acids are a group of three PUFAs that include alpha linoleic acid (ALA), docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA). They are all polyunsaturated fatty acids. ALA is required in the diet and is plentiful in canola, soybean, and flaxseed oils. Even though DHA and EPA are not essential fatty acids because the body can make them from ALA, this process is not efficient. For that reason, the Dietary Guidelines recommend that Americans consume more fish and seafood, rich sources of the omega-3 fatty acids DHA and EPA. Omega-3 fatty acids promote heart health. Check with your doctor before beginning to take fish oil tablets to increase DHA and EPA in your diet.

Omega-6 Fatty Acids

Omega-6 fatty acids promote heart health as well. They are also polyunsaturated fatty acids. The essential fatty acid linoleic acid is an omega-6. Vegetable oils such as corn, safflower, and soybean provide plenty of omega-6, so there is rarely a concern about Americans consuming sufficient omega-6 fatty acids.

Omega-3 and omega-6 fatty acids play many roles in the body. Together they support a healthy brain and balance important body processes such as blood clotting and inflammation. Inflammation is the body’s response to injury and helps with healing. It is an important body process. High levels of inflammation over a long period of time may increase the risk of some chronic diseases. How each fatty acid contributes to health continues to be studied.

Omega-9 Fatty Acids

Omega-9 fatty acids are a group of monounsaturated fatty acids. Our bodies make these fatty acids from others, so they are not considered essential. Oleic acid, the major fatty acid in olive oil, is an omega-9 fatty acid. Diets with more fat from olive oil are found in the Mediterranean areas of the world. This eating style is being studied for health benefits.

Balance between these types fatty acids is important. All are needed for good health. Check your food choices and be sure to include foods that provide all three types of omega fatty acids. The Dietary Guidelines for Americans encourage more mono and polyunsaturated fats from plant oils and fish to replace saturated and trans fats in the diet.
Lipids in the body

The lipids, or fats, in our diet influence the amount and type of lipids in our body. In the blood, lipids are mixed with proteins. This mixture makes it easier to move fats around the body to where they are needed. These mixtures of lipids and protein are called lipoproteins (lipo- for lipid or fat mixed with protein). Blood tests are used to find out how much of each kind of lipoprotein is in the body.

Every cell in our body needs a small amount of fat. The body needs a small amount of fat for daily needs. The fatty acids our body cannot make from other fats (also called essential fatty acids) can be supplied by a total of two to four tablespoons of oils each day.

Cholesterol is a fatlike compound in the blood that is made up of different types of lipoproteins. The body also makes cholesterol. The liver makes more cholesterol each day than most people eat in their diet. Cholesterol is an important part of hormones.

HDL stands for high density lipoprotein, also known as the ‘good’ type of blood cholesterol. HDL’s main job is to pick up cholesterol from around the body and help remove it. High levels of HDL help protect against heart disease.

LDL stands for low density lipoprotein, also known as the ‘bad’ type of blood cholesterol. LDL’s job is to take cholesterol made in the liver and from other sources to different places in the body. We need some LDL to be healthy. High levels of LDL are a risk factor for heart disease.
How dietary fats influence blood levels

The chart below summarizes the effects that the different groups of fatty acids have on blood values for LDL and HDL.

<table>
<thead>
<tr>
<th>Type of Fat</th>
<th>Food Sources</th>
<th>Effect on LDL or Bad Cholesterol</th>
<th>Effect on HDL or Good Cholesterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monounsaturated Fatty Acids (MUFAs)</td>
<td>Olive oil, canola oil, walnuts, and peanuts</td>
<td>Decreases</td>
<td>Increases</td>
</tr>
<tr>
<td>Polyunsaturated Fatty Acids (PUFAs)</td>
<td>Corn oil, soybean oil, safflower oil, and fish</td>
<td>Decreases</td>
<td>Increases</td>
</tr>
<tr>
<td>Saturated Fatty Acids (SFAs)</td>
<td>Animal fats such as beef fat, lard, butter, and some plant oil such as coconut and palm</td>
<td>Increases</td>
<td>Increases</td>
</tr>
<tr>
<td>Trans Fatty Acids (TFAs) Manmade</td>
<td>Processed foods with partially hydrogenated vegetable oils, snack crackers, cookies, fried foods, shortenings, and stick margarines</td>
<td>Increases</td>
<td>Decreases</td>
</tr>
</tbody>
</table>

Find out more about dietary fats and heart disease at these Web pages:

American Heart Association Website
www.americanheart.org

National Heart, Lung, and Blood Institute Information for the Public Website
www.nhlbi.nih.gov/health

Food and Drug Administration Website
www.fda.gov/food/labelingnutrition/default.htm

Canola Oil Website
www.canolainfo.org

Centers for Disease Control Website
www.cdc.gov/dhdsp

Olive Oil Website
www.oliveoilsource.com
Nutrition Facts Labels and Dietary Fats

The Nutrition Facts label provides information that will help you determine how much total fat, and what type of fat is contained in each serving of the food. The Total Fat tells you how many grams of fat are contained in each serving of the food.

If a food contains less than 0.5 grams of total fat per serving, the amount of fat is considered inconsequential and the label will show zero (0) grams. A food with 0.25 grams per serving would provide 1 gram in four servings of the food. Examples might be snack crackers, cookies, or other foods made with partially hydrogenated vegetable oil.

Check the ingredient label for the words *partially hydrogenated vegetable oil* to know if a food might have *trans* fatty acids.

Average Daily Calorie and Fat Guidelines for Women 24-50 years of age with one half hour of activity daily (based on MyPlate)

<table>
<thead>
<tr>
<th>Total calories</th>
<th>Total grams of Fat</th>
<th>Total grams of Saturated Fat</th>
<th>Grams of Mono and Polyunsaturated Fats make up difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>60</td>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>

MyPlate includes 5 teaspoons of oil in the food pattern to meet essential fatty acid needs. Five teaspoons of oil equals 25 grams of fat (5 grams per teaspoon). Use a food label to help you know how many total grams of fat and saturated fat your food choices provide.
Personal Discovery Assessment
Looking for Lipids

One way to figure out which types of fats are major players in your food choices is to look at the food in your cupboards, refrigerator, and freezer.

The lipids on the left hand side of the page are fats (saturated and trans). Lower fat and fat-free options appear just to the right of the saturated and trans fats. The lipids in the last two columns of the table are oils (mono and polyunsaturated). Use this home survey to decide which type of fat you have in your pantry.

**Instructions:** Circle the foods you find in your home. If your circles are on the left hand side of the page, consider options to move to the right. If most of your circles are in the middle or the right hand side of the page, great! The next step is to pay attention to how much and how often you have these foods.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter or Stick Margarine</td>
<td>Reduced Fat Margarine</td>
<td>Canola Oil Blends in Spreads</td>
<td>Spreads with Liquid Oil as main ingredient</td>
</tr>
<tr>
<td>Lard or Shortening</td>
<td>Soft Margarine</td>
<td>Canola Oil Olive Oil</td>
<td>Corn Oil</td>
</tr>
<tr>
<td>Whole Milk, Cheese, or Yogurt</td>
<td>Low fat Milk, Cheese or Yogurt and Fat-free Milk and Yogurt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marbled Red Meats, Poultry with skin</td>
<td>Lean Red Meats, Skinless Poultry</td>
<td>Nuts</td>
<td>Fish such as Salmon</td>
</tr>
<tr>
<td>Snack Crackers and Cakes made with partially hydrogenated vegetable oil</td>
<td>Home baked items with less fat</td>
<td>Home baked items with canola or olive oils</td>
<td>Home baked items with vegetable oils</td>
</tr>
</tbody>
</table>

Tip: Savor the flavor of foods on the left hand side for special occasions. Make most of your daily choices from the middle to the right hand side of the page.
Nutrition Nuggets
The Lowdown on Low Fat Recipes

It is helpful to know the role fat plays in a recipe before changing the recipe to be lower in fat. Low fat baking is an art form all its own. The tips below are a great place to start.

The rule of thumb for any recipe makeover is to test after every change. Have fun updating your favorite recipes for today’s nutrition sense.

Common ways to reduce fat in baked good recipes

- Try the recipe with up to one third less fat without a replacement – it may work fine!
- Use unsweetened applesauce or other fruit purees to replace half or more of the fat in a recipe.
- Use plain low fat or fat-free yogurt to replace half or more of the fat in the recipe.

Note: Replace fat with a measure for measure amount such as ½ cup applesauce for ½ cup margarine.

Many foods have a low fat option that can be used in recipes. Examples include

- Fat-free milk for whole or 2% milk
- Evaporated skim milk for regular evaporated milk
- Low fat plain yogurt or fat-free sour cream for regular sour cream

Flavor

Flavor is a major role for fats in recipes. Butter flavors baked goods. Butter can be reduced in a recipe to decrease saturated fat. A butter/margarine blend or butter/oil blend are two options to keep flavor when reducing the amount of fat or using a different type of fat.

Recipes that mix butter with sugar have a unique caramel flavor. Increase the amount of flavorings to make up for reducing the butter in a recipe.

Texture

Fat helps keep baked goods tender by coating the flour pieces. This coating keeps the protein in flour from linking to other proteins. When fat is reduced, baked items can be tough. Replacing some of the fat with unsweetened applesauce is one way to help keep baked goods tender. Here is another tip to try: Use whole wheat pastry flour. Pastry flour, also called cake flour, has less protein than all-purpose flour, so it will produce a more tender product. Whole wheat pastry flour adds whole grain goodness, too.

Egg yolks are a source of fat and cholesterol. They also help mix fat and protein. When a recipe calls for two eggs, try this idea: Use one whole egg and two egg whites for the second egg. Using all egg whites can make baked goods tough.
Moisture
Fat helps baked goods hold moisture. Oils have more moisture than butter or shortening, so flour may need to be increased slightly. Applesauce also adds moisture, so be sure to adjust recipes where it replaces some of the fat.

When butter or shortening is mixed with granulated sugar, it traps moisture and air in the batter. Reducing the fat or sugar will produce a different product.

Pureed prunes can make a product dry; adjust liquid in the recipe as needed. Oats are also likely to absorb liquid, so recipes with oats or oat bran may need an adjustment of the liquid ingredients. Testing is the key to finding the right mix.

Technique
Lower fat baking requires special attention to how the recipe is measured and mixed.

Weighing flour is the most accurate way to measure flour. Another method that works well is the spoon and sweep method. Stored flour can settle and compact. Stir flour to add air. Then spoon the free flowing flour into the measuring cup and sweep the surface level with a knife.

Never over mix a lower fat batter. Stirring too much helps the proteins bind and makes the product tough. Spoon and stir in flour rather than use a mixer. The mixer will often over mix the product and add to toughness.

More recipe ideas
- The fat in cheese helps carry the flavor. Use a flavorful cheese, such as sharp cheddar, with a lower fat cheese, such as part skim mozzarella. Try one part full flavored cheese to two parts reduced fat cheese.
- Nuts and seeds add flavor and healthy fats. Add a small amount to a lower fat recipe for more flavor and crunch.
- Remove extra fat from cooked ground beef. Put the cooked meat in a colander. Drain well. Use in spaghetti sauce, tacos, and chili recipes.
- Low fat margarines will not work well in recipes to replace other fats because they contain large amounts of water.
- Pay attention to portions. A sliver of a rich dessert is another way to reduce fat. Enjoy just a taste or two rather than a large wedge.
The Lowdown on Low Fat Recipes
Recipe Modification Activity

Read through The Lowdown on Low Fat Recipes on the previous two pages for ideas on how to modify a favorite recipe to have less fat with great flavor.

Next, practice modifying a favorite family recipe. Find a favorite recipe and decide how you might reduce the total fat or change the type of fat (from saturated to monounsaturated, for example) using the tips you have read. It is important to make one change at a time and test the recipe to assure a quality product.

Name of Family Recipe:
____________________________________________________________________________

Ingredients in recipe that provide fat and amount:
____________________________________________________________________________

Modification to recipe you will try to either lower total fat or change type of fat:
____________________________________________________________________________

When do you plan to try the modified recipe:
____________________________________________________________________________

Do you prefer to find a recipe that someone else has already modified and tested? Check out the two websites for ideas. If you find a recipe you want to try, fill in the information below.
http://mealmakeovermoms.com/recipes/
http://www.cookinglight.com/eating-smart/recipe-makeovers/

Recipe Name:
____________________________________________________________________________

Website address:
____________________________________________________________________________

Why did this recipe appeal to you?
____________________________________________________________________________

Take time to modify your recipe and search for recipes online, if desired. Then return to the online course to complete the interactive screen.

Be prepared to describe the recipe you selected, the changes you made, and when you will try the recipe.
If you found a recipe online, be prepared to list the recipe and source (website address), and why you selected it.

**Going Further**

Do you want to see how two different ingredients compare for fat? Use the Food-A-Pedia feature at www.ChooseMyPlate.gov/Supertracker/ to compare one ingredient to another for reducing fat, such as substituting light mayonnaise for regular mayonnaise in a potato salad recipe.

Do you want to analyze your new recipe to see how your changes improved the nutrition? For an online recipe analysis program, check

  www.recipes.sparkpeople.com/recipe-calculator.asp

  www.caloriecount.about.com/cc/recipe_analysis.php

  or another favorite website.

Disclaimer: Listing of these recipes and recipe analysis websites does not imply endorsement of the information at any site.
Cafeteria Connection
Limits on Lipids

The Healthy, Hunger Free Kids Act of 2010 calls on schools to reflect the Dietary Guidelines for Americans in meal programs. Meals need to provide students with minimums of nutrients needed for growth and health. Nutrients of concern, such as dietary fat, are balanced for good health. Over the menu week, limits are

- Zero grams of trans fat per serving on Nutrition Facts label for all foods purchased, and
- No more than 10% total calories from saturated fat.

Meals must meet minimum calorie levels but not exceed maximum calorie ranges for each grade group. Careful food preparation will help assure that extra calories from fat, protein, or carbohydrate are not added to foods.

School nutrition staff have many tools to meet these goals. Well planned menus with tested recipes are a major tool.

Tested recipes, also called standardized recipes, provide all steps to make a menu item. These recipes list the

- Food items to use
- Specific amounts of each item
- Steps to follow
- Total number of servings (yield)
- Serving size (portion)

Here are some quality measures to follow:

Select the right food item. The wrong ingredient can change the recipe, including the fat content.

Measure items carefully. An extra cup of oil, shredded cheese, or meat crumbles adds extra fat and calories to a recipe. The extra amount also adds to program food costs.

Use the right scoop, ladle, or portion size. Make sure the recipe as served matches the recipe as planned. A pan cut into larger sizes, for example 20 instead of 25 portions, increases fat and calories per serving by 20%. It also serves 20% fewer students!

Help students enjoy smaller amounts of condiments such as ketchup and salad dressings. Use portion packs or other means for portion control.

Look for new generation foods that are lower in fat. The National Food Service Management Institute has training materials that help schools make the most of new generation foods. Check the Resource Center at www.nfsmi.org for more materials, including a link to the USDA Recipes for Schools.

These daily work habits will assure meals served meet school nutrition program goals.
Cafeteria Connection
Check for Understanding
Interactive Activity

**Directions:** Read the Cafeteria Connection, Limits on Lipids, then read the following statements and decide which statements are true and which are false. If the statement is false, what changes would you make to correct the statement and make it true?

______ 1. The recipe doesn’t list how much or what type of ground beef to use. I like my spaghetti sauce meaty, so I will make sure I put in enough to satisfy my tastes.

______ 2. The recipe calls for a 6 ounce ladle; I have the correct serving utensil. I am ready to serve my students.

______ 3. I see that the delivery truck brought us a different brand of margarine than we usually use. I guess it doesn’t matter if they made a substitution; 1 gram of trans fat doesn’t seem like much.

______ 4. We make sure our students are served the correct portion size to fit within our program goals. Our meals meet the nutritional needs of the students.

______ 5. The chili is ready to serve. Linda, be sure to weigh the amount of cheese we need. Pre-shredded cheese can pack easily in a cup and we want to have the right amount. Weight is the most accurate measure.
**Cafeteria Connection**

**Check for Understanding**

**Interactive Activity Answer Key**

**Directions:** Read the Cafeteria Connection, Limits on Lipids, then read the following statements and decide which statements are true and which are false. If the statement is false, what changes would you make to correct the statement and make it true?

---

___ F ___ 1. The recipe doesn’t list how much or what type of ground beef to use. I like my spaghetti sauce meaty, so I will make sure I put in enough to satisfy my tastes.

> **If the recipe does not list an amount to use, check with your supervisor. Schools should be using standardized recipes.**

___ T ___ 2. The recipe calls for a 6 ounce ladle; I have the correct serving utensil. I am ready to serve my students.

___ F ___ 3. I see that the delivery truck brought us a different brand of margarine than we usually use. I guess it doesn’t matter if they made a substitution; 1 gram of *trans* fat doesn’t seem like much.

> **You should never accept substitutions unless they have been pre-approved by your director or purchasing agent. There are no daily requirements for *trans* fats and the *Dietary Guidelines* encourages keeping *trans* fatty acids as low as possible. However, there are some foods with naturally occurring *trans* fats. Foods served in schools need to be labeled “0 grams *trans* fat per serving.”**

___ T ___ 4. We make sure our students are served the correct portion size to fit within our program goals. Our meals meet the nutritional needs of the students.

___ T ___ 5. The chili is ready to serve. Linda, be sure to weigh the amount of cheese we need. Pre-shredded cheese can pack easily in a cup and we want to have the right amount. Weight is the most accurate measure.
Lesson 5 Pre- and Post-Quiz

1. The term lipid refers to
   a. all dietary fats and oils.
   b. the process for digesting fat.
   c. the bond between two carbons.
   d. the unit that connects to a carbon in a fatty acid.

2. Fats and oils
   a. should be avoided in the diet.
   b. need to be limited to 15% or less of total calories each day.
   c. are made up of different fatty acids, some of which are essential to good health.
   d. provides 4 calories per gram.

3. Oils are
   a. solid at room temperature.
   b. sources of healthy fats (mono- and polyunsaturated fatty acids).
   c. provide only non-essential fatty acids.
   d. made of only one type of fatty acid called polymonic acid.

4. Trans fatty acids
   a. are a type of healthy fat to be encouraged in the diet.
   b. decrease the risk of heart disease.
   c. are often man-made from vegetable oils processed to hold more hydrogen.
   d. are a type of essential fatty acid.

5. Fish is a source of
   a. high density lipoprotein.
   b. low density lipoprotein.
   c. polyunsaturated fatty acids.
   d. Trans fatty acids.
Vegetarian Diets
Resource Garden Variety Vegetarian Diets

The term “vegetarian diet” can mean different things to different people. For some it may mean not eating meat. For others it can mean eating only certain plant foods. For many others, it means something in between. The number of Americans choosing a vegetarian diet, at least part of the time, continues to grow. Surveys show that about three percent of American youth, ages 8- to 18-years, identify themselves as vegetarians.

There are a variety of reasons people chose to eat a vegetarian diet. Common reasons are

- Religious beliefs
- Cultural background, such as Asian or Indian
- Personal philosophy, such as animal welfare
- Health concerns
- Economics

The most common vegetarian diets in the United States are

- Lacto-ovo
- Lacto
- Vegan

Knowing how the vegetarian approaches differ can help make sense of a confusing term.

**Lacto-Ovo Vegetarians** eat plant-based foods plus milk/dairy products (lacto) and eggs (ovo). Lacto-ovo vegetarian diets are the least likely to have nutrient deficiencies because a few animal foods are included.

**Lacto Vegetarians** eat plant-based foods and milk/dairy products.

**Vegan Vegetarians** do not eat any animal-based foods. Strict vegans also avoid honey and foods derived from animal products such as gelatin. Vegan diets need careful attention to sources of the vitamin B-12, which is only found in animal foods.

**Less Common Varieties**

**Fruitarians** eat fruits, nuts, and seeds. They usually avoid grains, legumes, and vegetables that are not the fruit of the plant. This subtype of the vegan diet can lead to nutrient deficiencies.

**Macrobiotic diets** are plant-based, though some people include fish. Most macrobiotic diets feature grains, vegetables, and legumes with fewer fruits, nuts, and seeds.

**Raw food diets** are often plant-based. Uncooked and unprocessed foods are the basis of a raw food diet. Some people include raw meat or fish and raw milk.

**Semi-Vegetarians** may follow a self-styled eating plan rather than a defined vegetarian diet. These people may describe themselves as vegetarian yet eat fish (**pescatarian**) or poultry.

**Flexatarian** is another new term. This person may eat chicken, fish, or even red meat on occasion, but generally follows a plant-based diet.
# Protein Predictions

MyPlate suggests amounts of each food group to eat at various calorie levels. For a 2000 calorie diet, 6 ounces equivalent of grains, 3 cups of dairy and 5 1/2 ounces of protein foods are recommended. There are many choices in each food group.

Below are three different sets of food choices: a mixed diet, lacto-ovo vegetarian and vegan eating plan. The three food groups that provide the most protein are listed. Fruits do not provide protein and the protein content of vegetables varies by choice.

On the first ranking line, predict each diet’s protein content by circling the H for highest, M for middle and L for lowest. You will use the second ranking line when you resume the lesson.

Next, go to www.choosemyplate.gov/SuperTracker and use the Food-A-Pedia tool to total the amount of protein in each diet type listed below. At the website, find the food and enter the amount in the menu below. Click on the Nutrient Info tab to the right of the Food Info tab. Find the grams of protein; write the grams of protein after each item and total the meal amount.

Do you think any of these vegetarian diets do not provide enough protein to meet the basic needs (the recommended amount for any age group), circle the name of the diet (at the top). Then, resume the lesson.

<table>
<thead>
<tr>
<th></th>
<th>Mixed Diet</th>
<th>Lacto-Ovo</th>
<th>Vegan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains (6 ounces)</td>
<td>1 cup oatmeal</td>
<td>1 cup oatmeal</td>
<td>1 cup oatmeal</td>
</tr>
<tr>
<td></td>
<td>2 sl white bread</td>
<td>2 sl WW bread</td>
<td>2 sl WW bread</td>
</tr>
<tr>
<td></td>
<td>1 cup white rice</td>
<td>1 cup white rice</td>
<td>1 cup brown rice</td>
</tr>
<tr>
<td>Dairy (3 cups or equivalent)</td>
<td>3 cups milk</td>
<td>3 cups milk</td>
<td>3 cups soy beverage</td>
</tr>
<tr>
<td>Protein Foods (5½ ounces)</td>
<td>2 oz chicken</td>
<td>1 egg</td>
<td>2 T peanut butter</td>
</tr>
<tr>
<td></td>
<td>3 oz salmon</td>
<td>2 T peanut butter</td>
<td>¼ cup kidney beans</td>
</tr>
<tr>
<td></td>
<td>1 T sunflower seeds</td>
<td>1 T sunflower seeds</td>
<td>1 T sunflower seeds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Predicted Protein Ranking of Diet</th>
<th>H M L</th>
<th>H M L</th>
<th>H M L</th>
</tr>
</thead>
</table>

| Actual Grams of Protein Provided |
|----------------------------------|-------|-------|-------|

<table>
<thead>
<tr>
<th>Actual Protein Ranking of Diet</th>
<th>H M L</th>
<th>H M L</th>
<th>H M L</th>
</tr>
</thead>
</table>
Complete Proteins

When vegetarian diets gained popularity in the 1960s and 1970s, the advice was to make sure complete proteins were eaten at each meal.

Proteins are complete when they provide all the essential amino acids. Amino acids are the building blocks of protein. Animal proteins are complete with nine essential amino acids.

If an essential amino acid is lacking, the protein is incomplete. Most plant-based proteins are low in one or more of the essential amino acids. Plant-based proteins are limited by that amino acid and are considered incomplete. For example, if the only source of protein in a diet was corn, the diet would be low in lysine.

Grains and nuts and seeds are limited by the amino acid lysine; vegetables and legumes are limited by the amino acid methionine.

The chart below shows how different plant foods with incomplete proteins can combine to form complete proteins. The solid line in between two foods means most foods in the two groups can combine to provide complete protein. The dotted line between grains and nuts and seeds means some but not all foods in the two groups will combine to provide complete protein. When two foods combine to create a complete protein, the foods are called complementary.

Nutrition science has advanced since the early 1960s. Today’s advice for vegetarians is to eat a variety of plant-based protein sources throughout the day for complete proteins. A healthy vegetarian diet does not need to have complete proteins at each meal. However, complementary proteins are delicious and make menu planning easier. Vegetarian diets can provide adequate protein quality as well as quantity.
The Perfect Complement Menu Ideas

The foods listed on each menu card below combine to make a complete protein. Plant foods provide incomplete protein. Eggs and milk group foods provide complete protein.

<table>
<thead>
<tr>
<th>Red Beans</th>
<th>Rice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legume</td>
<td>Grain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bread</th>
<th>Sunflower Butter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain</td>
<td>Seed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Curried Beans</th>
<th>Rice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legume</td>
<td>Grain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Macaroni</th>
<th>Cheese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain</td>
<td>Milk (lacto) (animal – complete)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tossed Salad</th>
<th>Chopped Egg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable</td>
<td>Egg (ovo) (animal – complete)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hummus</th>
<th>Pita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legume</td>
<td>Grain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refried Beans</th>
<th>Tortilla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legume</td>
<td>Grain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tofu (Soybean Curd)</th>
<th>Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legume</td>
<td>Vegetable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cereal</th>
<th>Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain</td>
<td>Milk (lacto) (animal –complete)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quinoa</th>
<th>Dried Cherries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rare complete protein grain</td>
<td>Fruit (not a protein source)</td>
</tr>
</tbody>
</table>
Taste Bud Time Out! and Personal Discovery Assessment

1. TASTE
The focus of the taste activity is to try a new product that fits into vegetarian diets.

Write the name(s) of the food(s) tasted and your reaction to the food(s).

What foods complement this food, making it a complete protein?

What menu ideas do you have for featuring this food in a delicious meal?

2. ASSESS
How many vegetarian foods or meals do you eat?

How often do you enjoy plant-based entrees?

Put a check mark next to foods you have tried. Star the foods you eat regularly.

_____ Black Beans    _____ Soy beans
_____ Butter Beans    _____ Soy milk
_____ Garbanzo Beans    _____ Soy based meat substitutes
_____ Kidney Beans    _____ Split Peas (yellow or green)
_____ Lentils    _____ Tofu (soybean curd)
_____ Navy Beans    _____ Vegetable burgers
_____ Pinto Beans    _____ White Beans
_____ Red Beans

3. DISCOVER
To discover more about vegetarian diets, including recipes and menu plans, check out the following resources.


The Vegetarian Nutrition Dietetic Practice Group of the Academy of Nutrition and Dietetics, www.vegetariannutrition.net

The Vegetarian Resource Group, www.vrg.org

The Vegan Society, www.vegansociety.com
Nutrition Nuggets
Health Benefits of Vegetarian Diets

Vegetarians have a reduced risk of many chronic diseases. Many factors may protect vegetarians.

Some protection may be due to vegetarians’ body mass index (BMI). Body mass index is a ratio of weight to height. Vegetarians are more likely to have a healthy body weight than do non-vegetarians.

The health benefits of vegetarian diets are not explained by lower body weight alone. Specific foods and nutrients in these diets may play a role. Other lifestyle factors common among vegetarians, such as physical activity levels, may account for some benefit.

Compared to meat eaters, vegetarians have reduced risk for
- Heart disease, high blood pressure, and stroke
- Type 2 diabetes
- Some types of cancers

Vegetarians tend to have lower blood cholesterol levels. Blood pressure also tends to be lower among vegetarians compared to non-vegetarians. Both factors reduce heart disease and stroke. The chart below summarizes some of the nutrients in vegetarian diets and the known health benefits.

<table>
<thead>
<tr>
<th>Nutrient/Diet Component</th>
<th>Health Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietary fiber</td>
<td>• Higher in vegetarians diets; dietary fiber is associated with healthy body weight</td>
</tr>
<tr>
<td></td>
<td>• Lower body weight is linked to lower risk of chronic diseases.</td>
</tr>
<tr>
<td>Soluble fiber</td>
<td>• Helps lower blood cholesterol</td>
</tr>
<tr>
<td></td>
<td>• Helps keep blood sugar levels stable</td>
</tr>
<tr>
<td>Insoluble fiber</td>
<td>• Speeds food through the digestive tract, which may lower risk of some cancers</td>
</tr>
<tr>
<td>Soy protein</td>
<td>• Helps reduce blood cholesterol</td>
</tr>
<tr>
<td></td>
<td>• Linked to lower risk of type 2 diabetes</td>
</tr>
<tr>
<td>Fruits and Vegetables</td>
<td>• Rich in minerals such as potassium</td>
</tr>
<tr>
<td></td>
<td>• Help reduce blood pressure</td>
</tr>
<tr>
<td></td>
<td>• Rich in antioxidants and phytonutrients</td>
</tr>
<tr>
<td></td>
<td>• Help reduce heart disease risk</td>
</tr>
<tr>
<td></td>
<td>• Fight cancer cells in early stages</td>
</tr>
<tr>
<td>Legumes</td>
<td>• Help lower blood cholesterol</td>
</tr>
<tr>
<td></td>
<td>• Help keep blood sugar levels stable</td>
</tr>
<tr>
<td>Whole Grains</td>
<td>• Rich in vitamins, minerals, and dietary fiber</td>
</tr>
<tr>
<td></td>
<td>• Linked to lower risk of type 2 diabetes</td>
</tr>
<tr>
<td>Nuts</td>
<td>• Help lower blood cholesterol</td>
</tr>
<tr>
<td>Mono and Polyunsaturated Fatty Acids</td>
<td>• Help lower blood cholesterol, help reduce inflammation</td>
</tr>
</tbody>
</table>
**Nutrition Nuggets**

**Nutrients of Concern in Vegetarian Diets**

How well a vegetarian diet meets nutrition needs depends on some important factors. One is the type of vegetarian diet eaten. Another is if the vegetarian diet is well-planned and balanced.

A lacto-ovo vegetarian diet is most likely to meet nutrition needs because a wider variety of foods is included. A vegan diet can meet needs if well-planned. The chart below highlights several nutrients of concern for vegetarian diets.

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>Animal proteins are complete because they provide all essential amino acids. Plant proteins are incomplete because different plant foods lack different amino acids. Vegan diets that include whole grains, legumes, nuts, and seeds can provide both adequate protein quantity and quality. Complementary proteins do not need to be eaten at every meal and snack, but rather throughout the day. In order for protein needs to be met, vegetarian diets must provide adequate calories.</td>
</tr>
<tr>
<td>Iron</td>
<td>Meat provides heme iron which is highly absorbed and used by the body. Plant foods provide non-heme iron. The absorption of non-heme iron is increased when it is eaten with a food rich in vitamin C, for example spinach salad with orange segments. Iron fortified cereals and grains, legumes, and leafy greens are good sources of iron in plant based diets.</td>
</tr>
<tr>
<td>Calcium</td>
<td>Vegetarian diets that include enough milk and milk products will supply calcium needs. Vegetarians who do not include milk or milk products need to choose legumes, leafy green vegetables, and calcium fortified milk replacements such as calcium fortified soy milk.</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>Only animal foods provide vitamin B12. Strict vegan vegetarians need to include vitamin B12 fortified foods or supplements in order to have adequate intake. Vegetarian diets are rich in the B vitamin folacin, which can mask the symptoms of B12 deficiency. Doctors order blood tests to measure B12 status.</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>Vegetarians who do not have enough sun exposure may need a vitamin D supplement or vitamin D fortified foods.</td>
</tr>
<tr>
<td>Omega3 Fatty Acids</td>
<td>The omega-3 fatty acids in fish and seafood, DHA and EPA, are often low in the diets of strict vegans. Microalgae can be a source of DHA for vegetarians. The body can change DHA into EPA.</td>
</tr>
<tr>
<td>Zinc</td>
<td>Plant based foods are low in zinc. The high phytate content of vegetarian diets may further reduce absorption rates. Unrefined grains and legumes have phytate. Phytate binds with zinc.</td>
</tr>
<tr>
<td>Iodine</td>
<td>Plant foods are also low in iodine. Unless iodized salt is used, vegetarian diets can be low in this nutrient.</td>
</tr>
</tbody>
</table>
Cafeteria Connection
Vegetarian by Choice

A vegetarian diet is a student’s choice, not a special nutrition needs diet. Best practices encourage school nutrition programs to strive to meet the wants and expectations of customers.

Schools can choose one of two tools to help meet the needs of students who prefer vegetarian meals. The first is offer versus serve; the second is creative menu options.

**Offer Versus Serve**

High schools are required to give students the option of Offer-versus-Serve (OVS). This service style is often extended to students at lower grade levels.

OVS allows students to decline a food that the student does not want and still have a reimbursable meal.

OVS gives student choices. Those choices can include vegetarian options.

Consider a menu featuring a bean and meat soft shell taco for lunch. If the school serves the meat and beans separately, a student could decline the meat and accept the beans. The bean taco could be topped with lettuce, tomato, and salsa. The portion of beans would need to meet the meat/meat alternate planned portion.

If the student is a lacto-vegetarian, a piece of fresh fruit and milk would round out the meal. If the student does not drink milk, it could be declined.

The meal is reimbursable and meets the student’s likes.

**Creative menu planning**

Other menu items can follow the examples. Offer a main dish salad that allows a choice of two protein foods: beans, turkey chunks, shredded cheese, chopped egg, or nuts.

Two of these items on a colorful, fresh salad with whole grain-rich bread stick, and milk would meet the needs of all vegetarians. The student could decline milk if they followed a vegan eating style.

School nutrition programs can meet the needs of students who prefer vegetarian diets. When a choice is provided, offer a choice for vegetarian options. It will help all students meet the *Dietary Guidelines for Americans.*
**Protein Predictions Answer Key**

MyPlate suggests amounts of each food group to eat at various calorie levels. For a 2000 calorie diet, 6 ounces equivalent of grains, 3 cups of dairy and 5 ounces of protein foods are recommended for these food groups. There are many choices in each food group.

Below are three different sets of food choices: a mixed diet, lacto-ovo vegetarian and vegan eating plan. The three food groups that provide the most protein are listed. Fruits do not provide protein and the protein content of vegetables varies by choice.

On the first ranking line, predict each diet’s protein content by circling the H for highest, M for middle and L for lowest. You will use the second ranking line when you resume the lesson.

Next, go to [www.ChooseMyPlate.gov/SuperTracker](http://www.ChooseMyPlate.gov/SuperTracker) and use the Food-A-Pedia tool to total the amount of protein in each diet type listed below. At the website, find the food and enter the amount in the menu below. Click on the Nutrient Info tab to the right of the Food Info tab. Find the grams of protein; write the grams of protein after each item and total the meal amount.

Do you think any of these vegetarian diets do not provide enough protein to meet the basic needs (the recommended amount for any age group), circle the name of the diet (at the top). Then, resume the lesson. Select one idea and write it below.

<table>
<thead>
<tr>
<th>Grains (6 ounces)</th>
<th>Mixed Diet</th>
<th>Lacto-Ovo</th>
<th>Vegan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup oatmeal</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2 sl white bread</td>
<td>4</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>1 cup white rice</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dairy (3 cups or equivalent)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3 cups milk</td>
<td>8 X 3= 24</td>
<td>8 X 3= 24</td>
<td>6 X 3= 18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protein Foods (5½ ounces)</th>
<th>Mixed Diet</th>
<th>Lacto-Ovo</th>
<th>Vegan</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 oz chicken</td>
<td>17</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>3 oz salmon</td>
<td>21</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>1 T sunflower seeds</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Predicted Protein Ranking of Diet</th>
<th>H</th>
<th>M</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Grams of Protein Provided</td>
<td>78</td>
<td>63</td>
<td>56</td>
</tr>
<tr>
<td>Actual Protein Ranking of Diet</td>
<td>H</td>
<td>M</td>
<td>L</td>
</tr>
</tbody>
</table>
Lesson 6 Pre- and Post-Quiz

1. Vegetarian diets cannot meet the needs of growing children.
   a. True
   b. False

2. The vegetarian diet most likely to meet nutrition needs is
   a. vegan vegetarian.
   b. lacto vegetarian.
   c. lacto-ovo vegetarian.
   d. no vegetarian diet can meet nutrition needs.

3. Which of the following nutrients is not a nutrient of concern for vegetarian diets?
   a. Fiber
   b. Vitamin B12
   c. Iron
   d. Calcium

4. To be a healthful vegetarian diet,
   a. meals and snacks must be spaced every 2 hours, making it difficult to meet needs.
   b. it must contain complete protein in every meal and snack.
   c. it must provide complete protein and sufficient calories each day.
   d. include a cholesterol supplement to assure nutrition needs, since dietary cholesterol is lacking in vegetarian diets.

5. Vegetarian diets are
   a. covered by a special nutrition need and therefore protected by law.
   b. a personal preference for students and are not included in special nutrition needs diets.
   c. not a concern for school nutrition professionals, no students are vegetarians.
   d. too costly and difficult to include in school meal options for those students who follow the eating style.
Vital Vitamins and Mighty Minerals
Taste Bud Time Out! The Perception of Bitter

Supplies needed
Fresh radicchio, one small leaf **
Fresh lemon wedge
Salt shaker,
Plate, knife, and water for rinsing mouth between tastes, if desired

Note: Look in the produce section of the grocery store for radicchio. It is dark red and is sold in small heads; one leaf is all that is needed. It is also found in Italian green salad mixes. One bag will have several bite size pieces; three pieces are needed.

Wash and dry radicchio leave. Tear or cut leave into three bite-size pieces. Place the lemon wedge on plate do not let the lemon or juice touch any pieces of radicchio.

As you do this tasting activity, pay close attention to the perception of bitter while tasting each piece of radicchio. Rinse your mouth with water after tasting, if desired.

First, taste a plain piece of radicchio.

Second, rub the lemon wedge over the two remaining pieces of radicchio so that each has a light coating of juice but is not dripping with juice. Taste one of the pieces of radicchio with lemon juice, allowing the side of the leaf with lemon to touch your tongue first. Compare how much bitter you perceive this time compared to the plain radicchio.

Third, shake a small sprinkle of salt on the last piece of radicchio with lemon juice and taste. Compare the bitter taste you perceive to the other tastes of radicchio.

How does the perception of bitter change by adding sour (lemon) or sour and salt to the radicchio? Which taste did you like best: plain, with lemon, or with lemon and salt?

Plain radicchio has a bitter flavor. Adding lemon juice lessens the perception of the bitter flavor. The final taste with lemon juice and salt should suppress the perception of bitter flavor even more. The ability to taste bitter is genetic. Some people perceive the taste of bitter more than others; bitter-tasters may not enjoy some vegetables as much as others.

We use these flavor interactions to improve the taste of vegetables when we add cheese to broccoli, oil and vinegar dressing to salad greens, and other common combinations.

** Can’t find radicchio? Tonic water and a lime wedge can be substituted. Pour about 3 ounces of tonic water in a small cup. Taste for bitter. Squeeze lime juice from a ¼-½ inch wedge into tonic water, stir and taste again for bitter. Sprinkle a small amount of salt into the tonic water and lime, and stir. Taste again. Does the tonic water taste bitter or sweet now? The plain tonic water should taste bitter, tonic with lime a little less bitter, and tonic with lime and salt should taste sweet.
Vital Vitamins and Mighty Minerals from A to Zinc

Vitamins are grouped by the type of liquid in which they dissolve, fat or water.

The fat-soluble vitamins are A, D, E, and K

**Vitamin A** is vital to healthy skin, healthy eyes, and night vision. Food sources include milk, liver, egg yolks, and dark-green and orange vegetables. Taking too much vitamin A from supplements can damage health.

**Vitamin D** is also called the sunshine vitamin. The body can produce vitamin D when skin is exposed to sunlight. Vitamin D helps the body absorb calcium and contributes to strong bones and teeth. Food sources include fortified milk, fatty fish, liver, and eggs. Taking too much vitamin D from supplements can damage health.

**Vitamin E** is essential to red blood cell production. It is also helps keeps cells healthy. Food sources include vegetables oils, wheat germ, whole grains, and green leafy vegetables.

**Vitamin K** is necessary for normal blood clotting. Newborn babies receive a vitamin K shot at birth to assure healthy blood. Vitamin K also plays a minor role in strong bones. Food sources include dark-green, leafy vegetables, milk, vegetable oils, cabbage, and cauliflower.

The water-soluble vitamins include the B vitamins and vitamin C. Five of the more common members of the B vitamin group are listed below, followed by vitamin C.

**Thiamin**, vitamin B1, helps the body use energy and keeps the nervous system healthy. Food sources include whole and enriched grains, pork, eggs, yeast, dried beans, and green leafy vegetables.

**Riboflavin**, vitamin B2, is essential to converting carbohydrate, fat, and protein to energy. The digestive tract, mucous membranes, and skin need riboflavin to be healthy. Food sources include milk, cheese, whole and enriched grains, organ meats, eggs, and green leafy vegetables.

**Niacin** is another B vitamin that also helps release energy from foods. Niacin keeps the nervous system healthy and promotes healthy skin and digestive tract. Food sources include pork, beef, whole or enriched grains, peanuts, and liver.

**Folic Acid**, also known as folacin or folate, helps make new body and blood cells. New research shows this B vitamin helps prevent birth defects and may reduce heart disease. Food sources include green leafy vegetables, citrus fruits, strawberries, dried beans, enriched grains, fortified cereals, liver, and wheat germ.

**Vitamin B12** aids in nerve function and helps the body make new cells. Food sources include animal foods such as meat, poultry, fish, eggs, and milk. It is a nutrient of concern in strict vegetarian diets. Taking too much Vitamin B12 from supplements can damage health.
**Vitamin C** is part of collagen, aids immunity, and keeps gums and blood vessels healthy. Food sources include citrus fruits, tomatoes, peppers, potatoes, cantaloupe, strawberries, broccoli, and cabbage.

**Minerals** are classified as either major or trace depending on how much of the mineral is in the body. Iron, copper, and zinc are the trace minerals listed below; the other minerals listed below are major.

**Calcium** is best known for building and maintaining strong bones and teeth. Calcium plays a role in muscle contraction, nerve impulses, blood clotting, and normal blood pressure. Some research indicates it may help the body burn fat, though more research is needed. Food sources include milk, cheese, yogurt, dried beans, broccoli, fish with bones, dark green leafy vegetables, and calcium fortified soy products.

**Copper** helps the body to use iron and form energy. Connective tissue and body enzymes contain copper. Food sources include legumes, seafood, whole grains, nuts, seeds, and vegetables.

**Iron** prevents anemia, carries oxygen in red blood cells, boosts the immune system, and is linked to learning and problem solving. Food sources include lean red meats, organ meats, dark poultry meats, whole and enriched grains, legumes, and green leafy vegetables.

**Magnesium** contributes to strong bones and teeth and aids in normal blood pressure. Food sources include wholes grains, legumes, nuts, seeds, dark green vegetables, bananas, and chocolate.

**Potassium** regulates heart beats, is required for normal muscle function, and promotes normal blood pressure. Food sources include fruits, vegetables, milk, yogurt, legumes, and meat.

**Zinc** plays a critical role in immune function, wound healing, growth, blood clotting and is linked to improved school performance. Food sources include lean meat, eggs, seafood, nuts, and whole grains.

Nutrition Facts labels are required to provide information for vitamin A, vitamin C, calcium, and iron. Other vitamins and minerals may be listed. Packaged fresh fruits and vegetables provide Nutrition Facts labels. Many produce departments include posters and other types of point of sale nutrition information for fresh fruits and vegetables.

More manufacturers are labeling additional nutrients in foods, especially fruits, vegetables, and whole grains. If the levels of potassium, vitamin K, folic acid, and magnesium were not listed, would you realize how much spinach contributes to good health?
Personal Discovery Assessment Refrigerator Rater

Embark on a color quest! Search home or work refrigerators, freezers, and pantries for produce from these seven different color groups. Put a check mark next to foods you regularly eat. If less than five foods per color group are marked, check out the rainbow of produce choices at the grocery store. Purchase a new hue or two to enjoy at home. *Is a food missing from the list? Add it where it fits.*

<table>
<thead>
<tr>
<th>RED</th>
<th>RED/ PURPLE</th>
<th>ORANGE</th>
<th>YELLOW/ ORANGE</th>
<th>YELLOW/ GREEN</th>
<th>GREEN</th>
<th>WHITE/ GREEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pink Grapefruit/ Juice</td>
<td>Beets</td>
<td>Apricots</td>
<td>Golden Kiwifruit</td>
<td>Avocado</td>
<td>Bok Choy</td>
<td>Artichoke</td>
</tr>
<tr>
<td>Salsa</td>
<td>Berries: Blueberries, Blackberries</td>
<td>Cantaloupe</td>
<td>Nectarine, Peach</td>
<td>Green Beans</td>
<td>Broccoli</td>
<td>Asparagus</td>
</tr>
<tr>
<td>Tomatoes, Fresh or Canned; Sauce, Paste or Puree</td>
<td>Raspberry, Strawberries</td>
<td>Carrots</td>
<td>Orange or Tangerine/ Juice</td>
<td>Bell Peppers, Yellow or Green</td>
<td>Brussels Sprouts</td>
<td>Celery</td>
</tr>
<tr>
<td>Tomato or Vegetable Juice</td>
<td>Cherries</td>
<td>Mango</td>
<td>Papaya</td>
<td>Collard or Turnip Greens</td>
<td>Cabbage</td>
<td>Chives</td>
</tr>
<tr>
<td>Tomato Soup</td>
<td>Eggplant</td>
<td>Pumpkin</td>
<td>Pineapple</td>
<td>Corn</td>
<td>Cauliflower</td>
<td>Belgium Endive</td>
</tr>
<tr>
<td>Watermelon</td>
<td>Grapes, Fresh or Juice</td>
<td>Sweet Potatoes</td>
<td>Yellow Apples, Beets, Grapefruit/ Juice</td>
<td>Chinese Cabbage</td>
<td>Kale</td>
<td>Garlic</td>
</tr>
<tr>
<td></td>
<td>Radicchio</td>
<td>Winter Squashes: Acorn Hubbard</td>
<td>Pears</td>
<td>Green Peas, Snap Peas</td>
<td>Chinese Cabbage</td>
<td>Leeks</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>Red Apples, Cabbage, Onion, Pears, Peppers</td>
<td>Yellow Apples, Beets, Grapefruit/ Juice Pears</td>
<td>Honeydew</td>
<td>Kale</td>
<td>Mushrooms</td>
</tr>
<tr>
<td></td>
<td>Plums, Fresh or Dried</td>
<td>Wax Beans</td>
<td>Summer Squash, Tomatoes, Watermelon</td>
<td>Romaine Lettuce, Spinach</td>
<td>Swiss Chard</td>
<td>Onion</td>
</tr>
</tbody>
</table>
Nutrition Nuggets
The Next Nutrition Frontier – Phytonutrients

Nature packs fruits and vegetables with vitamins, minerals, and phytonutrients. Phytonutrients are plant-based (phyto) nutrients. They are not vitamins or minerals. Scientists are just starting to uncover all of the powerful, health-promoting compounds in plant foods.

Phytonutrients color produce vividly. Produce with similar hues may promote health in similar ways. How do phytonutrients work? Science does not have all the answers today. There is a strong promise of added health benefits of vegetables and fruits beyond the known actions of vitamins and minerals. It is reason enough to say ‘super-size’ the next colorful, delicious salad!

Red plant foods are rich in lycopene. Early studies show lycopene helps fight cancer and perhaps heart disease. Tomato products are particularly rich sources of lycopene. The cooking process increases the activity of lycopene.

Red/purple plants produce anthocyanins. These compounds may prevent age-related memory loss. Strawberries and blueberries show promise. This same active agent is in cranberries and is linked to reduced incidence of urinary tract infections.

White/green foods such as onions, leeks, garlic, and chives contain allicin. Which might enhance the immune system. Though more studies are need, early results show this compound may stop cancer in its very early stages.

Orange and yellow/orange foods are bursting with beta-carotene and other carotenoids. Scientists are studying the lower risk of cancer with higher intakes of carotenoids. Different types of carotenoids are present in plant foods. Scientists think that the power may be in partnerships of the various carotenoids working together.

Yellow/green plants like spinach are rich in lutein. An age-related eye disease may be less common among people with high lutein levels. Egg yolks are the rare animal food rich in lutein.

Green vegetables, including broccoli and Brussels sprouts, have a unique sulfur-based compound that helps the liver combat cancer. Cauliflower has the same compound; it is grouped with the green vegetables. These foods also help cells fight the spread of cancer.

Just a little fat, from a little drizzle of oil or sprinkle of cheese or nuts, helps the body absorb and use these super-star, health promoters from plants. It is just one more way foods work together to satisfy taste and health. Enhance the flavors with a squeeze of lemon and enjoy!
Resource Websites for Organizations: Fruits and Vegetables

These organizations offer nutrition information and recipes featuring a variety of fruits and vegetables. Look for consumer and school nutrition service information.

**Fruits**
- Apricot Producers of California
  - www.apricotproducers.com
- California Cling Peach Board
  - www.calclingpeach.com
- California Dried Plum Board
  - www.californiadriedplums.org
- California Kiwifruit Commission
  - www.kiwifruit.org
- California Raisin Marketing Board
  - www.calraisins.org
- California Table Grape Commission
  - www.tablegrape.com
- Cherry Marketing Institute
  - www.choosecherries.com
- Florida Department of Citrus
  - www.floridajuice.com
- National Watermelon Promotion Board
  - www.watermelon.org
- New England Apple Association
  - www.newenglandapples.org
- New York Apple Association
  - www.nyapplecountry.com
- US Highbush Blueberry Council
  - www.blueberry.org
- Northwest Cherry Growers
  - www.nwcherries.com
- Oregon Raspberry and Blackberry Commission
  - www.oregon-berries.com
- US Apple Association
  - www.usapple.org
- Washington State Apple Commission
  - www.bestapples.com

**Vegetables**
- Florida Tomato Committee
  - www.floridatomatoes.org
- Mushroom Council
  - www.mushroomcouncil.org
- National Onion Association
  - www.onions-usa.org
- U.S. Potato Board
  - www.uspotatoes.com
- North Carolina Sweet Potato Commission
  - www.ncsweetpotatoes.com

**Produce Organizations**
- Produce for Better Health Foundation
  - www.fruitsandveggiesmorematters.org
- United Fresh Fruit and Vegetable Association
  - www.unitedfresh.org
Vitamins and Minerals Check for Understanding Activity

Directions: Look at the list of vegetables below and place an X or check mark in the column if the food is a good source of Vitamin A, Vitamin C, Iron, or Calcium.

**Vitamins and Minerals in Vegetable Subgroups**

<table>
<thead>
<tr>
<th>Vegetable Subgroup</th>
<th>Vit A</th>
<th>Vit C</th>
<th>Iron</th>
<th>Calcium</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dark Green</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broccoli</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Spinach</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td><strong>Red/ Orange</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Carrots</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Sweet Potatoes</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td><strong>Legumes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried Beans</td>
<td>______</td>
<td>______</td>
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</tr>
<tr>
<td>Lentils</td>
<td>______</td>
<td>______</td>
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<tr>
<td><strong>Starchy</strong></td>
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<tr>
<td>Potatoes</td>
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<tr>
<td>Peas</td>
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<td>______</td>
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<tr>
<td><strong>Other</strong></td>
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<tr>
<td>Green Peppers</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Cabbage</td>
<td>______</td>
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</tr>
</tbody>
</table>
Vitamins and Minerals Check for Understanding
Activity Answer Key

Directions: Look at the list of vegetables below and place an X or check mark in the column if the food is a good source of Vitamin A, Vitamin C, Iron, or Calcium.

Vitamins and Minerals in Vegetable Subgroups

<table>
<thead>
<tr>
<th>Vegetable Subgroup</th>
<th>Vit A</th>
<th>Vit C</th>
<th>Iron</th>
<th>Calcium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Green</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broccoli</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Spinach</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Red/ Orange</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet Potatoes</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Legumes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried Beans</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lentils</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Starchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potatoes</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peas</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Peppers</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cabbage</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cafeteria Connection Pumping Up Performance

“Pumping Iron”—dietary sources of iron, is a powerful tool to help students achieve their best in school.

Do you know how poor iron intake can influence a student’s ability to learn? The potential side effects of iron deficiency, also known as anemia, include

Increased tiredness
Shortened attention span
Decreased capacity to work
Less resistance to illness
Impaired ability to think and problem-solve

One or more of these symptoms can add up to a student unable to learn and perform at his or her best.

Low iron status is a common health concern for teenage girls. Many girls do not eat enough of the richest sources of iron, including red meat, liver, whole and enriched grains, and fortified cereals. Another group of students at higher risk for poor iron intake is “vegetarians”. Well-planned vegetarian meals can provide nutrient needs, including iron. However, some youth “become vegetarian” without learning to plan nutritious meals. They often skip iron-rich dried beans, peas, lentils, and whole grains. Nor do they eat vitamin C-rich foods that increase the absorption of iron from plant foods.

Schools meals are planned to provide iron, calcium, and vitamins A and C. These nutrients do more than support growth and development. Vitamins and minerals enhance the immune system, which helps students miss less school due to illness. Good nutrition also provides the brain with critical nutrients needed for learning. Encouraging fruit and vegetable intake is one way to increase vitamins and minerals in the diet.

New tools are available to help school food service professionals encourage students to eat plenty of fruits and vegetables daily. *Fruits and Vegetables Galore: Helping Kids Eat More* is a must-have guide. It features tips for purchasing and preparing colorful combinations of produce. Dozens of ideas for promoting fruits and vegetables in school meals are provided. Flavorful recipes and marketing ideas burst from the pages.

Lesson 7 Pre- and Post-Quiz

1. Iron is an important nutrient because
   a. iron is needed to prevent night blindness.
   b. all American children are iron deficient.
   c. iron carries oxygen to various parts of the body.
   d. iron status determines bone density.

2. The best sources of vitamin A are
   a. milk and dark green/orange fruits and vegetables.
   b. whole grains.
   c. dried beans, peas, and lentils.
   d. bananas, onions, and garlic.

3. Vitamin C is needed in the body for all of these needs except
   a. promote healthy immune system.
   b. form collagen, part of healthy bones and ligaments.
   c. prevent goiter.
   d. increase absorption of non-heme iron.

4. Spinach is a good source of calcium because of its high absorption rate.
   a. True
   b. False

5. Scientists are studying compounds in fruits and vegetables that promote health which are
   a. found in large amounts in vitamin/mineral supplements.
   b. found in the color pigments of plants.
   c. are part of the structure of a vitamin.
   d. only exist in organic produce.
Diet Decisions
Did You Know?

Achieving and maintaining a healthy body weight is an important key step to good health.

Small changes add up to big results.

Consider the following:

A 5% weight loss can reduce

T ________________________ B ________________________ Ch ________________________

A 5-10% weight loss can prevent or delay the onset of

T ________________________ D ________________________

A 10% weight loss can reduce

B ________________________ P ________________________

Being overweight or obese increases risk for

S ________________________ T ________________________ of C ________________________

According to *America on the Move*, increasing physical activity to burn ____________ or more calories a day and decreasing food intake by ____________ calories a day can cause a ________________ pound weight loss over 12 months.
Low Carbohydrate Menu

**Breakfast**
1 cup Tuna Salad
1/2 Grapefruit

**Lunch**
6 ounces Chicken
1/2 cup Tossed Salad/Dressing

**Dinner**
6 ounces Steak
1/2 cup Summer Squash
1/2 cup Tossed Salad/Dressing

**Snack**
1 ounce Almonds
1 Cucumber, medium size
1/2 cup Coleslaw (no sugar)
MyPlate Menu

**Breakfast**
¾ cup Oatmeal with
½ ounce of Toasted Walnuts
6 halves of Dried Apricots
1 cup Fat-free Milk

**Lunch**
Tuna Salad made with
2 ounce of Water-packed Tuna
1 tablespoon of Light Mayonnaise on
2 slices of Whole Wheat Bread with
3 leaves Bibb Lettuce and
1 ½ ounces Low fat Sliced Cheddar Cheese
1 small Apple
Hot Tea or coffee, plain

**Dinner**
Beef Stir Fry
3 ounces Cooked, Lean Beef stir fried with
1 tablespoon Olive Oil,
¾ cup Broccoli,
¾ cup Cauliflower, and
¾ cup Carrots
¾ cup Brown Rice
1 medium Orange
1 cup Fat-free Milk

**Snack**
½ cup Low fat Lemon Yogurt with
½ cup Blueberries
Compare Two Diet Plans

Follow the directions below to compare the two menus at SuperTracker.

1. Go to the SuperTracker at www.supertracker.usda.gov. Log in to your account, or create a profile.
2. Change the date to yesterday’s date and enter the foods listed on the Low Carbohydrate menu. When you are finished you should see a screen similar to the image on the next page, Screen Shot of Low Carbohydrate Menu.
3. Change the date to today’s date and enter the foods listed on the MyPlate Menu. When you are finished you should see a screen similar to the image on the next page, Screen Shot of MyPlate Menu.

Note: The screens in this activity compare the two menus to the food group recommendations for 1600 calories. If your calorie needs are higher or lower than 1600 calories, the screen you see may look different than the images in this activity.

Physical Activity Booster cue: Can you feel your new belly button?
4. Answer the Diet Plan questions on page 117. Refer to the Food Group Fact Sheets on pages 118 to 122 in your workbook and the information covered in previous lessons if you have questions below the screen image of the Low Carbohydrate and MyPlate menu screen shots on the next two pages. To see more detailed nutrient information for each menu, click on the **Nutrient Intake Report** link under the Food Group Target Report (see red circle on images on the next two pages.)

Remember from the previous lessons that the nutrition information on a food label is based on a 2000-calorie diet. Women over the age of 50 with less than 30 minutes of physical activity daily require approximately 1600 calories a day. For many people, 1600 calories may be a good starting point for a weight reduction diet; check with your health care provider for personalized health information. You can also use the tools at SuperTracker to help determine your calories needs for current weight and safe weight loss, if desired.

5. Compare your answers to the answer key on page 123.

Physical Activity Booster cue: Can you feel your new belly button?
What food groups are missing from the low carbohydrate menu?  

Do you predict any nutrients will be low in the menu?  
List your predictions.  
Too Low:  
How are these nutrients important to good health?  

Do you predict any nutrients will be too high in the menu?  
List your predictions.  
Too High:  
How are these nutrients important to good health?
Screen Shot of MyPlate Menu

What food groups are missing from the MyPlate menu?

Do you predict any nutrients will be low in the menu?
List your predictions.
Too Low: ____________________________________________

How are these nutrients important to good health?

____________________________________________________

Do you predict any nutrients will be too high in the menu?
List your predictions.
Too High: ____________________________________________

How are these nutrients important to good health?

____________________________________________________
Food Group Fact Sheet
Grains

Nutrients in Grains

Carbohydrate – for energy

Fiber – for a healthy digestive tract; heart health

B Vitamins – for energy release; healthy nervous system and skin

Iron – for healthy blood and immune system; part of enzymes in the body

Diets that are rich in grains provide soluble fiber and help reduce the risk of heart disease.

Diets that are rich in grains provide insoluble fibers that help keep the digestive tract healthy and may reduce risk of some types of cancer. Diets that are rich in whole grains are linked to lower risk of developing diabetes.

Daily recommendations* are 6 ounces of grains daily. Make half of daily choices whole grains.

*Amount for 2000 calorie diet; your needs may vary.
Food Group Fact Sheet
Vegetables

Nutrients in Vegetables

Carbohydrate – for energy
Fiber – for a healthy digestive tract; heart health

Vitamin A – for healthy skin and eyes
Vitamin C – for healthy gums, blood vessels, and immune system
Potassium – for healthy blood pressure

Diets high in richly colored vegetables are associated with a lower risk of some types of cancer.

Diets that are rich in vegetables, fruits, and low fat milk and milk products help keep blood pressure healthy.

Fresh and frozen vegetables are lower in sodium than most canned vegetables. Choose vegetables without added salt more often.

Daily recommendations* are 3 cups of vegetables daily.
Vary vegetables choices and focus on colorful vegetables.

*Amount for 2000 calorie diet; your needs may vary.
Food Group Fact Sheet
Fruits

Nutrients in Fruits

Carbohydrate – for energy

Fiber – for a healthy digestive tract; heart health

Vitamin A – for healthy skin and eyes

Vitamin C – for healthy gums, blood vessels, and immune system

Potassium – for healthy blood pressure

Diets high in richly colored fruits are associated with a lower risk of some types of cancer.

Diets that are rich in fruits, vegetables, and low fat milk and milk products help keep blood pressure healthy. Whole fruits provide fiber; choose whole fruits more often than juice.

Daily recommendations* are 2 cups fruits daily.
Focus on a variety of fruits and go easy on juices.

*Amount for 2000 calorie diet; your needs may vary.
Food Group Fact Sheet
Dairy

Nutrients in Milk, Cheese, and Yogurt

Protein – for tissue growth and repair; healthy immune system

Calcium – for strong bones and teeth; needed for muscle contraction, nerve activity, and proper blood clotting

Vitamin A – for healthy skin and eyes

Vitamin D – for healthy bones Potassium – for healthy blood pressure

Lifelong intake of adequate calcium is one way to reduce the risk of brittle bones.

Diets that are rich in low fat milk and milk products, fruits, and vegetables help keep blood pressure healthy.

Choose low fat and fat-free milk and milk products often to reduce intakes of the type of fat that can increase the risk for heart disease.

Daily recommendations* are 3 cups fat-free or low fat milk or dairy products daily.

*Amount for 2000 calorie diet; your needs may vary.
Food Group Fact Sheet
Protein Foods

Nutrients in Protein Foods

Protein – for tissue growth and repair; healthy immune system

Iron – for healthy blood and immune system; part of enzymes in the body

Zinc – for a healthy immune system; part of enzymes in the body

Fiber (Nuts, Seeds, and Legumes) – for a healthy digestive tract; heart health

Nuts, seeds, and fish provide the types of fat that promote heart health.

Meats (beef, pork, and poultry with skin) contain the types of fats we need to limit for good health. Lean meats and low fat cooking methods help reduce levels of these fats. Lean and low fat cooking methods help keep the flavor up and fat down in meats and bean dishes. Dried beans and peas provide protein and fiber with little fat.

Daily recommendations* are 5-6 ounces of lean meats daily, and eat fish, nuts, seeds, and legumes more often.

*Amount for 2000 calorie diet; your needs may vary.
Compare Two Diet Plans
Answer Key

Low Carbohydrate Menu
What food groups are missing from this menu? Grains, Dairy and low in Fruits
Do you predict any nutrients will be low in the menu? Yes
List your predictions.
Too Low: Fiber and Calcium
How are these nutrients important to good health?
Fiber promotes digestive health and heart health. Calcium is important for healthy bones and blood pressure.
Do you predict any nutrients will be too high in the menu? Yes
List your predictions.
 Too High: Fat and Protein
How are these nutrients important to good health?
Both fat and protein are essential nutrients. Too much fat is linked to heart disease. Protein is not the body’s most efficient source of energy.

MyPlate Menu
What food groups are missing from this menu? All food groups are provided in recommended amounts
Do you predict any nutrients will be low in the menu? No
List your predictions.
Too Low: 
How are these nutrients important to good health?

Do you predict any nutrients will be too high in the menu? No
List your predictions.
Too High: 
How are these nutrients important to good health?
Personal Discovery Assessment – Food Record Handout

Use the form below to record daily food intake. Put a check mark under the food group to track servings. If desired, record calories and total each day. Track amount of physical activity; try to have at least 30 minutes most days of the week. It can take 3-4 weeks to change a habit. Keep a daily record to help you chart your progress.

<table>
<thead>
<tr>
<th>Time/Meal</th>
<th>Food</th>
<th>Amount</th>
<th>Calories</th>
<th>Grains</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Dairy</th>
<th>Protein</th>
<th>Oils</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Bran Muffin</td>
<td>2 ounce</td>
<td>220</td>
<td>√√</td>
<td></td>
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<tr>
<td>7:00 a.m.</td>
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</tr>
</tbody>
</table>
Lesson 8 Pre- and Post-Quiz

1. For an adult, an increased intake of 100 calories a day over the course of a year
   a. will reduce risk of heart disease.
   b. will increase fiber intake to recommended levels.
   c. can result in a 10-pound weight gain.
   d. predicts bone density values.

2. Sustained changes in food intake and activity levels
   a. are a common characteristic among individuals who have maintained a
      significant weight loss for several years.
   b. need only be for a few weeks, long enough to lose weight
   c. are not necessary with surgery for weight loss.
   d. can interfere with weight loss medications.

3. When choosing a weight loss plan, which factor is least important for healthy weight loss?
   a. The calories and nutrients the plan provides.
   b. How reasonable the plan is, to increase likelihood weight loss will be sustained.
   c. How enjoyable the plan will be and therefore be easier to follow.
   d. Food costs are reimbursed by insurance.

4. Keeping a food record
   a. is time consuming and doesn’t help change habits.
   b. is a proven way to help lose weight.
   c. does not help change habits since those take 3-4 months to change.
   d. is expensive and hard to do.

5. An overweight person who loses ____________% of his or her total body weight reduces
   risk of developing diabetes, heart disease, and some types of cancer.
   a. 33%
   b. 25%
   c. 10%
   d. 15%
Choosing Foods for Health and Taste
Ideas for Making Good Nutrition Easier

Consider these four factors that affect food choices and the questions for each. List your ideas for making good nutrition easier to achieve. When you have listed at least two ideas for each factor, return to the course.

TIME:

How can we put time on the side of good taste and nutrition? What are some timesaving ways you have found to prepare nutritious foods in your busy, time-crunched life?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
AVAILABILITY/CONVENIENCE:

How can we make it easier to choose nutritious foods for meals? What actions do you take to make healthy choices more available and convenient?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
PRICE:

How can we put price to work for better nutrition choices? What strategies do you use to make the most of your food and nutrition dollar?

__________________________________________________________________________

__________________________________________________________________________

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__________________________________________________________________________

TASTE:

What did you notice about the tastes of new foods you may have tried during this course? Have you ever made a change in your food choices and noticed a personal change in taste preferences? What methods or tips will you use for combining good taste with good nutrition?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

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__________________________________________________________________________
Nutrition Nuggets
Enhancing Flavors

Put natural taste interactions to work for you. Use the tips below to enhance the tastes you prefer in foods. Squeeze fresh lemon juice on mixed salad greens that have been drizzled with olive oil. The sour in the juice suppresses the bitter in salad greens and reds, like radicchio. A dash of salt will further suppress the bitter flavor.

Try a squeeze of lemon or lime juice just before serving on nearly any cooked vegetable with a bitter taste such as broccoli or Brussels sprouts. Once again, the sour of the fresh juice suppresses the bitter flavors.

Sprinkle a strong flavored cheese such as Parmesan or Romano on cooked vegetables. The salt from the cheese will suppress the bitter in the vegetable. A strong flavored cheese imparts a big flavor with a little bit of cheese. Mix a strong flavored cheese with a low fat cheese such as shredded mozzarella for a generous sprinkle that is lower in calories.

Top a sour fruit such as grapefruit segments with a sweet fruit such as finely diced, sweetened dried cranberries. The sweet from the cranberries will touch the tongue first and decrease the sour of the grapefruit. The color combination is pretty, too.

Remember that pepper on the top will suppress the taste of salt. When watching your salt and sodium intake, make sure the use of pepper does not increase your salt shakings. Red pepper does not suppress the perception of salt.

Use temperature for maximum taste advantage. A grapefruit half that is broiled or warmed slightly in a microwave will taste sweeter than cold grapefruit.

Enhance the natural sweetness of foods by using spices such as cinnamon, cardamom, ginger, or nutmeg. These spices, along with vanilla, are sweet enhancing flavors. Experiment with these spices in vegetable dishes. The taste sensation may surprise you.

Experience the flavor that fresh herbs can bring to salads and cooked dishes. Most cookbooks have a chart of common herb and food combinations. Read the labels of fresh herbs in the store for more ideas.

Create your own savory foods by using slow cooking methods that naturally create wonderful flavor profiles. Caramelized onions, homemade chicken stock, and slow roasted foods have time to develop savory flavors. Compare the tastes of homemade applesauce, which has been slowly simmered, to the taste of canned. The taste may bring you back to homemade more often.

Toasting is a simple way to enhance the flavors of nuts and seeds. Toasting brings out the flavor of nuts. Add a tablespoon or two of toasted nuts or seeds to the top of yogurt and fruit, a colorful vegetable salad, barley and brown rice pilaf, or cooked oatmeal several times a week.
Resource
More Choices for Good Taste and Good Nutrition

Are you looking for some new recipes that deliver great taste and nutrition? Here are a few resources that provide recipes, tips, and guides to meet today’s nutrition needs.

FOR YOUR BOOK SHELF
– BOOKS TO GET OR GIVE

Cooking Healthy Across America
The American Dietetic Association Food and Culinary Professionals Practice Group
Kristine Napier, MPH, RD, Editor
Wiley and Sons, © 2005

365 Days of Healthy Eating
The American Dietetic Association
Roberta Larson Duyff, MS, RD, FADA, CFCS Wiley and Sons, © 2003

The Moms’ Guide to Meal Makeovers
Janice Bissex and Liz Weiss
Broadway Publishers, © 2004

FOR YOUR COMPUTER– WEBSITES TO BOOKMARK AS FAVORITES

www.cookinglight.com Cooking Light magazine hosts this website. Find information about cooking for today’s needs of nutrition and taste. A subscription to Cooking Light magazine gives full access to all parts of the site.

www.healthyeating.org Find nutrition calculators, interactive tools, and recipes at this Dairy Council of California website.

www.mealmakeovermoms.com Janice Bissex and Liz Weiss, authors of The Moms’ Guide to Meal Makeovers, sponsor this site. The site has tips, guides, and link to other resources. The Kitchen Links is a great tool to find other recipe rich websites.

www.mealt ime.org Sponsored by the Canned Food Alliance, the recipes, tips, and nutrition sections are devoted to showing how to use canned foods to meet today’s nutrition needs.

www.nhlbi.nih.gov/health/public/heart/hbp/dash/ and www.dashdietoregon.org These are two great websites for recipes that support the DASH (Dietary Approaches to Stop Hypertension) eating style. The Dietary Guidelines for Americans suggest DASH as another healthful food guidance system to use in planning meals. Recipes on these two websites encourage plenty of produce, whole grains, fish, lean meats, and low fat dairy products.
Be a Portion Pro

The guide below gives a comparison between common household items and food portions. These images are useful tools. Learn to compare the portion on a plate to these reference amounts. Know how many servings are in the portion and decide how much of the portion to eat.

Cupped hands = ½ cup of popcorn or pretzels

Computer mouse = baked potato

Deck of cards = 3 ounces meat

Tennis ball = ½ cup of fruit, vegetable, cooked grain, or ice cream

Compact disc = size of a pancake

Check book = fillet of fresh fish or waffle

Golf ball = 2 tablespoons of peanut butter

Six dice = 1 ½ ounces of cheese cubed

Sources for portion size comparisons:
Correct Portion Sizes: How to Keep Portion Distortion in Check

Portion Size Plate
http://www.webmd.com/diet/printable/portion-control-size-guide

Both sites accessed Aug. 12, 2012
### Build a Meal Activity

Build a salad bar meal at this all-you-can eat restaurant. Follow the directions below.

1. Review the possible choices for your salad bar meal. Put a check mark next to the items you would choose if you were actually building a meal from this bar.

#### All You Can Eat Salad Bar and Beverages – free refills

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Proteins</th>
<th>Fruits</th>
<th>Toppings</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 calories per</td>
<td>60 average per</td>
<td>20 calories per</td>
<td>25 calories per</td>
</tr>
<tr>
<td>¼ cup</td>
<td>portion listed</td>
<td>portion listed</td>
<td>portion listed</td>
</tr>
<tr>
<td>Salad Greens</td>
<td>Diced Turkey, 1 oz</td>
<td>Canned, all types</td>
<td>20 croutons</td>
</tr>
<tr>
<td>Shredded Carrot</td>
<td>Diced Ham, 1 oz</td>
<td>in light syrup, ¼ cup</td>
<td>Creamy dressing</td>
</tr>
<tr>
<td>Grape Tomatoes</td>
<td>Hard Cooked Egg, 1</td>
<td>Dried, 1 T</td>
<td>regular fat, 1 tsp</td>
</tr>
<tr>
<td>Sliced Cucumber</td>
<td>Shredded Cheese, 2 T</td>
<td>Fresh, ¼ piece</td>
<td>Reduce Fat Ranch</td>
</tr>
<tr>
<td>Broccoli Florets</td>
<td>Beans, ¼ cup</td>
<td></td>
<td>Dressing, 1 T</td>
</tr>
<tr>
<td>Cauliflower Florets</td>
<td>Cottage Cheese, ¼ cup</td>
<td></td>
<td>Sunflower seeds,</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>½ T</td>
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<table>
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<th>Grains</th>
<th>Other Salad</th>
<th>Beverages</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 calories per</td>
<td>75 calories per</td>
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</tr>
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<td>portions, calories</td>
</tr>
<tr>
<td></td>
<td></td>
<td>listed by type</td>
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<tr>
<td>Crackers, 6</td>
<td>Potato, ¼ cup</td>
<td>Regular Cola, 140</td>
</tr>
<tr>
<td>Breadstick, 1 small</td>
<td>Macaroni, ¼ cup</td>
<td>Sweet Tea, 90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Orange Juice, 180</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low Fat Milk, 150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water, 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diet Soda, 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plain Tea or Coffee, 0</td>
</tr>
</tbody>
</table>

NOTE: Calorie estimates are general ranges for foods listed and not exact amounts.
2. Write down the items you have selected, the amount you would take and the calories for the amount of item you add to your meal.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount for meal</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Total

3. Add up the total calories that your salad bar meal would provide, based on the amounts selected. For a more precise calorie calculation, use the tools at www.SuperTracker.usda.gov and enter your choices.

Now compare the calories in your meal to about 1/3 of the calories most adult women would need daily, 600 to 650 calories, or adult men, 650 to 725.

Are the total calories of your meal, including any free drink refills, more or less than about 1/3 of daily calories?

What is one piece of advice you would give a friend about this self-serve salad bar?
Build a Meal Activity Possible Meal Option

Write down the items you have selected, the amount you would take and the calories for the amount of item you add to your meal. Note: Calorie ranges for food items are general averages.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount for meal</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed Greens</td>
<td>1 cup</td>
<td>40</td>
</tr>
<tr>
<td>Grape Tomatoes</td>
<td>¼ cup</td>
<td>10</td>
</tr>
<tr>
<td>Shredded Carrots</td>
<td>¼ cup</td>
<td>10</td>
</tr>
<tr>
<td>Cottage Cheese</td>
<td>¼ cup</td>
<td>60</td>
</tr>
<tr>
<td>Diced Ham</td>
<td>1 ounce</td>
<td>60</td>
</tr>
<tr>
<td>Beans</td>
<td>¼ cup</td>
<td>60</td>
</tr>
<tr>
<td>Red. Fat Ranch Dressing</td>
<td>2 Tbsp</td>
<td>50</td>
</tr>
<tr>
<td>Sunflower Seeds</td>
<td>1 Tbsp</td>
<td>50</td>
</tr>
<tr>
<td>Breadstick</td>
<td>2</td>
<td>150</td>
</tr>
<tr>
<td>Potato Salad</td>
<td>¼ cup</td>
<td>75</td>
</tr>
<tr>
<td>Sweet Tea</td>
<td>12 ounces</td>
<td>90</td>
</tr>
<tr>
<td>Canned Peaches</td>
<td>½ cup</td>
<td>40</td>
</tr>
</tbody>
</table>

Total 695

Are the total calories of your meal, including any free drink refills, more or less than about 1/3 of daily calorie needs? The meal provides more than 1/3 of the daily calorie needs for most women; it is very close to 1/3 of daily calorie needs for many adult men.

What advice you would give a friend about this self-serve salad bar?
Fill more than half of your plate with raw vegetables and go easy on protein foods and toppings. The calories add up, but so do the nutrients when more fruits and vegetables are selected. Beverages add calories, too!
Cafeteria Connection
Tap into the Power of Taste

Taste is a major factor in students’ choices for meals. The balance of nutrition and great taste in school meals contributes to students’ health and academic success in many ways. For school meals to deliver nutrition, students must choose and eat the foods offered. One method to increase students’ demand for foods is to find out what tastes students prefer. Another method is to introduce students to new foods and create demand for new tastes. Both approaches can produce winning results for school nutrition.

First, offer school meals that appeal to students’ taste preferences. Conduct surveys to find out what students like. Collect ideas for new menu options. If the new ideas need makeovers to meet the nutrition requirements of school meals, check with colleagues for recipes and distributors for new food items.

Tap into the power of taste to increase students’ demands for menu items. A variety of approaches can yield major results.

Organize a student advisory council to serve as a taste panel. Ask a student group that already exists, such as the student body officers or a service club, or gather a new group. Have the students taste test menu items, both new options and old favorites, and give feedback. Ask these students to poll other students for new menu ideas.

Partner with teachers. Talk to teachers and plan ways to take new tastes to the classroom. Some natural pairings include
- Try different colored fruits and vegetables in primary grades and art classes.
- Taste ethnic foods featuring whole grains in classes studying different parts of the world and different cultures.
- Conduct mock elections for new menu candidates with grades studying U.S. history and democracy. Use a taste and vote ballot.

Second, make the cafeteria a “new tastes” training ground. Give students a chance to try new foods. They may respond with enthusiasm to new choices; everyone likes a change of pace.

Market new menu items. Provide bite-size samples of new menu options on the serving line. Let students know when the new food will be served as part of lunch.

Provide “just a taste” opportunities. Younger students may only select familiar foods at school meals. The chance to have just a taste of an unfamiliar food may encourage children to make different choices.

Partner with common interest groups. PTO/PTA groups, local nutrition and health organizations, and food companies may be able to help. Find out if any grants are available to fund the cost of taste tests.

**Tapping into the Power of Taste with Your Students**

Look over the ideas in the Cafeteria Connection again and mark the ideas that you think would work best with your students.

Select one idea and write it below.

________________________________________________________________________

Brainstorm some steps to take to put this idea to work for your school nutrition program.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Share these ideas with your supervisor. Develop your plan and implement it!
Summary of Ideas for Making Good Nutrition Easier

Below are all of the ideas from the online presentation for making good nutrition easier. Refer to these ideas when you need a fresh approach.

TIME:

• Creatively use convenience foods. Prepare an extra cup or two of quick-cooking brown rice and add it to a store-bought or premade chicken rice casserole. Adding brown rice increases the fiber and decreases the fat and sodium per portion.
• Keep cans of beans handy. Drain and rinse beans to remove extra sodium. Canned beans are high-fiber, low fat protein foods. Opening a can is a quick food preparation method.
• Prepare plates of produce. Put a platter of assorted, seasonal fresh fruit slices (i.e., kiwi, orange, and banana) on the dinner table. It takes only minutes to wash, slice, and serve.
• Jumpstart the cooking process. Batch cook and freeze portions of ingredients, such as wheat berries, or entrees, such as vegetable lasagna, for use later in the week or month.

AVAILABILITY/CONVENIENCE:

• The availability of whole grains in grocery stores is increasing; look for new options in the bulk bins, natural foods, and grains sections.
• Canned and frozen foods offer a wide variety of colorful fruits and vegetables.
• Keep a list for shopping and use it. Make your plan with variety in mind.
• Stock the pantry and freezer with healthful foods. Toss together a great tasting meal in minutes from a well-stocked pantry.
• Use supermarket request cards to increase options. Ask your neighborhood grocery store for more variety and choices. Many grocery store chains provide cards for customers to request items for the store to stock. These cards are usually found in shelf holders, at check stands, or through customer service desks. If a store does not have a formal request program, to ask the store management to stock desired products.
• Look for non-perishable products you want through internet or mail order.
**PRICE:**

- Use a shopping list to limit purchases to items needed. Avoid impulse purchases by following a menu plan and not shopping while hungry.
- Concentrate shopping in the perimeter areas of the store, where fresh produce, milk, fish, poultry, meats, and breads are stocked. Limit purchases of processed foods.
- Compare unit prices and purchase the best value between foods. Use coupons for foods you will use; saving money on an item that sits on the shelf is not really a savings.
- Purchase fruits and vegetables in season.
- Split the cost and the quantity of foods from bulk food outlets or warehouse stores with a friend or family member. Large packs are only a good deal if you can use the item before it spoils.

**TASTE:**

- Try new food preparation methods and change one aspect of a food. For example, oven bake strips of potatoes lightly coated with canola oil or spray in place of commercially pre-fried frozen French fries.
- Add small amounts of nuts or a flavorful cheese to a colorful main dish salad.
- Purchase lower-sodium broth and canned vegetables.
- Rely on canned or frozen produce picked and processed within hours to maintain maximum flavor when fresh is out of season. As an added bonus, these products save food preparation time.
Personal Discovery Assessment
Mindful Eating

For 3 days, keep track of the food and meals you eat. Using the form on page 124 of this workbook, recording the day and time, foods eaten, anyone who shared the meal, emotions or feelings, and any other activities done while shared the meal, emotions or feelings, and any other activities done eating, such as watching TV.

Rate your taste awareness of the foods using this scale:
1 = did not notice flavors to
10 = paid complete attention to each flavor tasted.

Rate your level of hunger before and after eating using this scale: 1 = famished to
10 = uncomfortably overstuffed.

Review the sample form set up below for an example of how to create and complete the form.

<table>
<thead>
<tr>
<th>Day/ Time</th>
<th>Food</th>
<th>With Whom</th>
<th>Where</th>
<th>Eating and Doing</th>
<th>Feelings, Emotions</th>
<th>Taste Awareness</th>
<th>Hunger Level Before Food</th>
<th>Hunger Level After Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon. 6:30 am</td>
<td>Oatmeal with milk, blueberries, coffee</td>
<td>Husband</td>
<td>Kitchen Bar</td>
<td>Scanning newspaper</td>
<td>Feeling rushed</td>
<td>3</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

How often did you
Eat while doing another activity? _______
Eat not noticing the food flavors? _______
Eat fully noticing the food flavors? _______
Eat when very hungry? _______
Eat when not very hungry? _______
Stop eating before feeling full? _______
Stop eating when pleasantly full? _______
Stop eating when overly full? _______

Were you more mindful when eating because you were filling out this form? Yes____ No____

Did you learn anything new about yourself by doing this activity? No____ Yes____
Lesson 9 Pre-Post Quiz

1. Time, availability/convenience, price, and taste are factors that influence food choices.
   a. True
   b. False

2. Taste preferences
   a. are based in both genetics and experience and can be changed over time.
   b. are determined by genetics and cannot be changed.
   c. are solely learned behaviors.
   d. are set by 24 months and do not vary.

3. The natural flavor in foods can be enhanced by all of the following except
   a. preparation techniques such as toasting seeds or nuts.
   b. slow cooking.
   c. serving tart foods cold to enhance sweetness.
   d. using lemon juice on foods with bitter flavor such as salad greens or Brussels sprouts.

4. Portion sizes
   a. do not matter as long as a food is low in fat.
   b. have become larger for many foods over the last 20 years.
   c. are regulated in restaurants to meet a national standard.
   d. are not used in school meal programs.

5. School meals contribute to the health and school achievement of students by
   a. providing a balance of protein, carbohydrate, and fat for sustained energy with great taste.
   b. providing only low fat foods.
   c. providing nutrition education activities to all students.
   d. providing only those foods that are familiar to students.
Nutrition Issues in the Media
Ten Tips for Evaluating Nutrition News

1. Is a quick fix promised? Be wary of any information that promises a quick to fix to a problem. Chances are it does not have sound science behind it.

2. Are dire warnings given about a food? Rarely does a single food or product cure or cause an illness. Groups with official sounding names may have a political or economic agenda. Check out the credibility of groups or individuals making dire warnings.

3. Does it sound too good to be true? If so, the claims probably are. Many factors determine good health. Family history, long term food and activity habits, and other factors are still unknown.

4. Does the report give simple findings from a complex study? Most people would be amazed to see the difference between the research and the media reports. Media outlets want short sound bites of information. Researchers usually write with a tone of caution. They limit their findings or call for more research. Headline writers frequently do not see the scientific reports. Their job is to get headlines noticed. Read further.

5. Is a single study used for new advice? Good science requires more than one study to find the same results. After several studies support a finding, new recommendations may be issued. Be cautious of a single study that appears to turn nutrition science on its ear.

6. Do credible health organizations agree? When questionable information is publicized, leading health organizations will issue a response. They may state concerns with a study’s findings or recommendations. Continue to follow a story in the days after a report. Check with leading health groups. There may be more to the story.

7. Is a list of good and bad foods issued? Be skeptical of lists of foods to eat and foods to avoid totally, especially when there seems to be neither rhyme nor reason to the lists. An example might be advice to eat green peppers but avoid red peppers. Be very cautious of advice to exclude entire food groups, such as grains or meat. Excluding entire food groups can lead to nutrient deficiencies.

8. Is a product being sold? If a new product is promoted as a cure all to a problem, be cautious. The people behind the information have profit motivation. Be skeptical about new diet books for the same reason. Look at the credentials of the person associated with the product or the book. Is the person a medical doctor or a doctor of literature? Anyone can call himself or herself a nutritionist. A Registered Dietitian has completed a college degree in nutrition science, has passed a national exam, and has a professional code of ethics.

9. How well was the study conducted? It can be difficult for consumers to determine if a study is valid. Testimonials, one person’s story, are not considered solid science. In a testimonial, someone says, “I did this and this happened.” The two events may not be cause and effect. They may be coincidence. Good science is peer reviewed and repeated by other scientists.
10. Does the study take results from one group and apply it to others? A study of one group of individuals cannot be applied to another group in the population. The differences between children and adults, women and men, and between subgroups in the population require separate studies. Very big differences exist between animals and people. New areas of research are often studied in animals first. Animal research may show a promising new approach for further study. The results of animal research cannot be directly applied to people.

Adapted from Academy of Nutrition and Dietetics Ten Red Flags for Junk Science 2013 Media Guide, January 2013
Nutrition Information Check for Understanding
Interactive Activity

Directions: Read each of the descriptions of misinformation you might receive through the media and decide which type of misinformation it is and write your answer in the space provided.

1. Allergy Expert Group issues statement on the use of Penguin Feather Extract; cautions against use. ______________________________________________________________
   ______________________________________________________________________

2. Study in Journal of Penguins finds over-groomers consume more feathers which block intestines leading to malnutrition, weight loss. __________________________________
   ______________________________________________________________________

3. A social media post by a friend that she lost 40 pounds using Penguin Feather Extract; expects to recover from surgery for blocked intestine soon. _________________________________
   ______________________________________________________________________

4. New product from Antarctica takes 3 lbs off over night! Penguins’ feathers contain metabolic enhancer. Lose 30 lbs in 10 days. _____________________________________________
   ______________________________________________________________________

5. Avoid these five foods and prevent hair loss. Why you should never eat these five common foods. __________________________________________________________________________________
   ______________________________________________________________________

Types of Misinformation

Quick Fix!
Good/Bad Foods
Study in animals directly applied to people
Testimonial
Peer reviewed research
Do health groups agree?
Nutrition Information Check for Understanding
Interactive Activity Answer Key

Directions: Read each of the descriptions of misinformation you might receive through the media and decide which type of misinformation it is and write your answer in the space provided.

1. Allergy Expert Group issues statement on the use of Penguin Feather Extract; cautions against use. __Do health groups agree?________________________________________
   ________________________________________________________________________

2. Study in Journal of Penguins finds over-groomers consume more feathers which block intestines leading to malnutrition, weight loss. __Study in animals directly applied to people______________________________
   ________________________________________________________________________

3. A social media post by a friend that she lost 40 pounds using Penguin Feather Extract; expects to recover from surgery for blocked intestine soon. __Testimonial__________________________
   ________________________________________________________________________

4. New product from Antarctica takes 3 lbs off over night! Penguins’ feathers contain metabolic enhancer. Lose 30 lbs in 10 days. __Quick Fix!________________________________________
   ________________________________________________________________________

5. Avoid these five foods and prevent hair loss. Why you should never eat these five common foods. __Good/Bad Foods______________________________
   ________________________________________________________________________

Types of Misinformation

Quick Fix!
Good/Bad Foods
Study in animals directly applied to people
Testimonial
Peer reviewed research
Do health groups agree?
Resource Nutrition on the Web

The Internet is a great resource of information. Remember, anyone can post any information on the Web. Not every piece of information about nutrition on the Web is supported by science. Be careful about the Web sources you trust for food and nutrition information. A flashy site with persuasive claims may not stand up to the test of science.

Here are some trustworthy sources for food, nutrition, and health information. If you are not sure about the information you find at a website, investigate more. Visit these sites and see how the information compares. Telephone or write to a group if you prefer. Check out new information with another source. Decide if the latest nutrition news is trustworthy or too good to be true.

Organizations

- Academy of Nutrition and Dietetics
  www.eatright.org
- School Nutrition Association
  www.schoolnutrition.org
- International Food Information Council Foundation
  www.foodinsight.org
- National Council Against Health Fraud
  www.ncahf.org
- Quack Watch
  www.quackwatch.org
- Nutriwatch, Your Guide to Sensible Nutrition
  www.nutriwatch.org

Government Agencies

- U.S. Department of Agriculture
  Food and Nutrition Service
  www.fns.usda.gov
- U.S. Department of Agriculture
  National Agricultural Library
  Food and Nutrition Information Center
  http://fnic.nal.usda.gov
- U.S. Food and Drug Administration
  Consumer Updates
  www.fda.gov/ForConsumers/ConsumerUpdates/default.htm
- Federal Citizen Information Center
  publications.usa.gov
Nutrition News Know How

Nutrition trends and fads abound. The school cafeteria can be a wellspring of practical, science based information on food and nutrition.

- Post bulletin boards with color pictures of healthful foods and nutrition information.
- Create table tents with short nutrition quizzes and answers. Address issues in a general way.
- Print nutrition news on the menus that go home with students.
- Promote a food group or food of the week or month. Provide short, informative food facts for school announcements and newsletters.
- Provide current nutrition information to student newspapers, school Web sites, and other school based outlets of information.

If adults embrace a food trend or fad, they may have questions about the foods served in the school meal programs. School nutrition professionals can provide a positive perspective. A few key points to keep in mind include

- Job One. School nutrition programs exist to serve students.
- State the Standards. List the nutrition standards school meal programs must meet to comply with USDA guidelines and state agencies. Teachers use education standards in the classroom. Use terms familiar to teachers to help them understand the requirements of school meal programs.
- Help a Health Concern. If an adult has a specific concern, provide ideas to help the person select from the school cafeteria offerings and meet personal needs.
- Refer to a Resource. Keep the name and number of a nutrition expert handy. Refer questions to a district school nutrition supervisor, state agency professional, local Registered Dietitian, or health department nutritionist.

Use the resources from this course for basic nutrition information. Contact the following groups for up to date child nutrition program responses to current issues.

National Food Service Management Institute  
The University of Mississippi  
P.O.Drawer188 University, MS 38677-0188  
www.nfsmi.org  

School Nutrition Association  
120 Waterfront Street, Suite 300  
National Harbor, MD 20745  
www.schoolnutrition.org  

USDA Food and Nutrition Service School Meals and Team Nutrition  
3101 Park Center Drive  
Alexandria, VA 22302  
www.fns.usda.gov/child-nutrition-programs

Your local Child Nutrition Program State Agency
Nutrition Nuggets Fluid Facts

Do you know which nutrient your body needs most? It is water. Water is so critical that without fluids, a person would not survive. A person can live without food for a few weeks, but can live without water for only a few days.

Water is part of every cell in the body. Water plays a role in nearly every body process. Water works to promote health by

- Transporting nutrients to the cells
- Removing waste products from the cells and the body
- Lubricating joints
- Cooling the body through perspiration
- Moistening the eyes, mouth, and nasal passages
- Aiding in digestion as part of saliva and digestive juices

Exactly how much water or fluids a person needs each day varies. Physical activities and hot weather or conditions increase fluid needs. Thirst, the desire to drink fluids, is your body’s cue that it needs more fluids. Obey your thirst and enjoy fluids with and between meals.

Fluid studies indicate water and other beverages provide most of the fluids in the diet. Foods provide about 20% of daily fluids. A combination of foods and beverages can meet a person’s needs. Meet your fluid needs with

- Water
- Vegetables
- Fruits
- Milk
- Juice
- Soups
- Other beverages

Health experts encourage plain water and unsweetened beverages for a variety of reasons. Tooth decay can occur with a frequent intake of regular soft drinks, sports drinks, fruit punches, and other sugary drinks. Sugar sweetened beverages are a source of extra calories and may contribute to weight gain. Coffee or tea provide fluids; just be sure daily fluid choices are varied. The guides of balance, variety, and moderation apply to both daily food and fluid choices.

It is common to see water bottles carried by young and old alike. Here is a tip to keep your drink refreshing and safe. Use a durable water bottle designed to be reused. Thoroughly clean reusable water bottles with a bottlebrush and hot, soapy water between uses. Wash bottles with large openings in a dishwasher if made of dishwasher safe materials. Refilling a water bottle without a thorough washing creates a perfect place for bacteria to grow. Keep your water fresh and clean.
Lesson 10 Pre- and Post-Quiz

1. Nutrition news on the Internet
   a. must be accurate to be posted on websites.
   b. is monitored by the National Web Accuracy Agency (NWAA).
   c. can be posted by anyone so must be viewed carefully.
   d. cannot be used to sell products.

2. A sign that nutrition information may be inaccurate is
   a. if a quick fix is promised.
   b. the information is supported by recognized health organizations.
   c. the results reported are specific to the population group studied.
   d. the results are provided within the context of other studies.

3. A registered dietitian
   a. is the same as a nutrition therapist or nutritionist.
   b. does not need a college degree.
   c. does not need to have continuing education to maintain registration.
   d. is required to earn a college degree, complete an internship, pass an exam, and follow a code of ethics.

4. Which is true about research studies?
   a. Animal studies are often reported in news and can be directly applied to people.
   b. Studies that prevent the researchers and subjects from knowing which group subjects are in, control or treatment, are at higher risk of biased results.
   c. Often produce results that are different depending on the population studied, such as women versus men, or natives of a specific country versus another country.
   d. Must include placebos to be a valid study.

5. Fluid needs
   a. can be met with water, beverages, and foods.
   b. are not a concern in nutrition.
   c. are the same for all people.
   d. can only be met with water.