UNIT 6: Nutrition

GRADE LEVEL: 8-12

TIME RANGE: No less than 15 days

GRADING PERIOD: ANY

LESSON/UNIT PLANS

UNIT: 6

TOTAL LESSONS: 6 out of 15 LESSONS

OBJECTIVES:

1. Discuss the functions of the six categories of nutrients in the diet;
2. Compare carbohydrates, fats, and proteins in terms of how each provides energy to the body;
3. Describe a sound nutritional plan based on the recommended daily intakes (DRIs) and the USDA's food guide pyramid;
4. Demonstrate the ability to read label;
5. Describe and analyze Fiber intake; and
6. Dispel common nutritional myths.

Students can reach these objectives through the following methods:

1. Complete an awareness inventory that describes, defines and discusses the above objectives.
2. Complete an assessment of your current Dietary Behavior.
3. Prepare a report to the class instructor that discuss some myths and facts regarding nutrition.
4. Prepare a report on sources of your common foods that you consume and what nutrients are included in each food.
5. Complete a daily record and analyze in a report of your daily fiber intake.

Service-Learning Activity for Principles of Exercise

Conduct a workshop or presentation on how to eat in a healthy way. Create fliers announcing the workshop throughout the school, and include handouts to the participants of the workshop.

LESSON 1:
Discuss the functions of the six categories of nutrients in the diet.

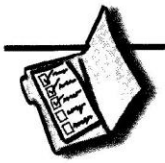
LESSON FOCUS:
Complete an awareness inventory that describes, defines and discusses the above objective.

LESSON PLAN:

1. As a warm-up conduct a 10-15 minute instant activity that gets the students moving throughout the gym and prepares them for the main physical activity.
2. Have students complete an awareness inventory that describes, defines and discusses the above objectives. See below Awareness Inventory
3. After students complete the wellness inventory share the answers with them and discuss each question with the class.
4. Explain the below kinds of nutrients:
    a. Energy Nutrients
        i. Carbohydrates, Simple Versus Complex Carbohydrates
            1. Soft drinks
            2. Energy drinks
        ii. Fats
            1. Fats in Food
            2. Trans-Fatty Acids
            3. Artificial Fats
            4. Polyunsaturated fat
            5. Monosaturated fat
        iii. Proteins
            1. Amino acids
            2. Nonessential amino acids
            3. Essential amino acids
        iv. Sources of Protein
            1. Complete proteins
            2. Incomplete proteins
            3. Low biological value
            4. High biological value
        v. Nonenergy Nutrients

1. Vitamins
2. Minerals
3. Iron
4. Supplementation
5. Megavitamin intake
6. Hypervitaminosis

vi. Water



Awareness Inventory

Name _____ **Date** _____

Check the space by the letter T for the statements that you think are true and the space by the letter F for the statements that you think are false. The answers appear following the list of statements. This chapter will present information to clarify these statements for you. As you read the chapter, look for explanations for the reasons why the statements are true or false.

T ___ **F** ___ 1. Saturated fat is found only in animal products such as pork, beef, and other meat products.

T ___ **F** ___ 2. Margarine can be consumed freely because it has no known health consequences.

T ___ **F** ___ 3. The primary fuel for aerobic exercise is fat.

T ___ **F** ___ 4. Fruits, vegetables, and grains contain no cholesterol.

T ___ **F** ___ 5. Trans-fatty acids form during processing when hydrogen is added to unsaturated vegetable oil to ensure consistency, prevent rancidity, and make the product more solid at room temperature.

T ___ **F** ___ 6. The number one cause of adult-onset type 2 diabetes is obesity.

T ___ **F** ___ 7. When blood-glucose levels are too high, the pancreas secretes the hormone, insulin, which removes excess glucose to storage in the liver and muscles.

T ___ **F** ___ 8. Glucagon is a hormone secreted by the pancreas when blood-sugar levels are too low.

T ___ **F** ___ 9. The fat-soluble vitamins include vitamin C and the B-complex vitamins.

T ___ **F** ___ 10. A large portion of the vitamins consumed in food products is absorbed, whereas only a small portion of minerals consumed is absorbed.

Answers: 1-F, 2-F, 3-T, 4-T, 5-T, 6-T, 7-T, 8-T, 9-F, 10-T

From *Physical fitness and wellness, third edition,* by Jerrold S. Greenberg, George B. Dintiman, and Barbee Myers Oakes, 2004, Champaign, IL: Human Kinetics.

LESSON 2:
Compare carbohydrates, fats, and proteins in terms of how each provides energy to the body.

LESSON FOCUS:
Complete an assessment of your current Dietary Behavior.

LESSON PLAN:

1. Explain and conduct an instant activity or the pacer test/run as a warm-up to the activity. This should take approximately 15-20 minutes.
2. Have students complete an Analyze Yourself/Assessing Your Dietary Behavior that describes, defines and discusses the above objectives. See below Analyze Yourself.
3. After students complete the assessment share the answers with them and discuss each question with the class.
4. Assign students to track their food intake for at least 3 days on the following website: www.myfitnesspal.com
5. Have the students return with a written report no more than one page on their current dietary behavior based from their 3 day results from myfitnesspal.com
6. If time is available conduct a main physical fitness activity.

Analyze Yourself

Assessing Your Dietary Behavior

Name _____ **Date** _____

Instructions: Indicate how often each of the following occurs in your daily schedule. Respond to each item with a number from 0 to 3, using the following scale:

0 = Never **1** = Occasionally **2** = Most of the time **3** = Always

___ **1.** When shopping for food, I read nutrition labels before buying and select items low in fat and salt and moderate in calories.

___ **2.** I make sure I consume less than 300 milligrams of cholesterol daily.

___ **3.** I drink a minimum of six glasses of water daily, exclusive of products such as sodas, coffee, and tea.

___ **4.** I try to consume servings from the five food groups daily.

___ **5.** I limit my alcohol intake to one or two drinks daily.

___ **6.** I consume the proper amount of protein daily, even when I am restricting my caloric intake.

___ **7.** I limit my daily intake of total fat to 30% or less of my needed daily calories.

___ **8.** I consume a sufficient amount of fruits, vegetables, and grains to obtain a minimum of 25 to 35 grams of dietary fiber daily.

___ **9.** I take no more than one multiple vitamin and mineral daily.

___ **10.** As recommended on the nutrition pyramid, I consume products containing fats, oils, and sweets sparingly.

Scoring: Excellent eating habits = 25 to 30

Good eating habits; can be improved = 19 to 24

Poor eating habits; change needed = below 19

From *Physical fitness and wellness, third edition*, by Jerrold S. Greenberg, George B. Dintiman, and Barbee Myers Oakes, 2004, Champaign, IL: Human Kinetics.

LESSON 3:
Describe a sound nutritional plan based on the recommended daily intakes (DRIs) and the USDA's food guide pyramid.

LESSON FOCUS:
Prepare a report to the class instructor that discuss some myths and facts regarding nutrition.

LESSON PLAN:

1. Explain and conduct an instant activity or the pacer test/run as a warm-up to the activity. This should take approximately 15-20 minutes.
2. Have students prepare a written report on some myths and facts regarding nutrition.
3. The report should be no more than 5 full pages and should take no more than one week to complete.
4. Explain and discuss with the students on some of the below myths and facts:

    a. ***Myth:*** **Potato chips count as a vegetable in the Food Guide Pyramid.**
    Fact: While potatoes are found in the vegetable group, potato chips are not. Potato chips are extremely high in fat and should, therefore, only be eaten occasionally.
    b. ***Myth:*** **"Starve a fever; feed a cold," or is it "feed a fever; starve a cold"?**
    Fact: Neither! Fevers and colds both require adequate nutrition. While children may not have an appetite for many foods when they are sick, it is still important to frequently encourage food and fluid intake.
    c. ***Myth:*** **Chocolate and fried foods cause acne.**
    Fact: Research has not shown a connection between the consumption of chocolate and/or high fat food intake and the appearance of acne. Acne is primarily associated with hormonal changes in adolescence.
    d. ***Myth:*** **Fish is brain food.**
    Fact: Fish provides many excellent nutrients and is an excellent food choice. However, it does not have any special effects on brain development or learning.

e. ***Myth:*** **Sugar causes hyperactivity.**
Fact: Sugar has not been shown to cause hyperactivity. A modest intake of sugar is acceptable in the context of a balanced, nutritious diet.

5. If time is available have students participate in an activity that relates to nutrition.

Physical Activity Lesson

Name of Activity: The Fast Food Quiz
Purpose of Activity: This activity is designed to show students how difficult it can be to make healthy food choices and to help them understand the nutritional information available for a variety of foods. This lesson is done at the start of a nutrition unit that I teach in a Cardio Fitness class. It was developed after I realized that many students had no idea how to make good food choices, or how to interpret nutritional information. Many students are keen to adopt or maintain a healthy active lifestyle, yet neglect to ensure that they are eating from all the food groups and that they are consuming nutritious food that is beneficial to them.
Prerequisites: Basic knowledge of the main food groups.
Suggested Grade Level: 9-12
Materials Needed: 10 stations with activity cards, equipment for each station (determined by station choices), fast food logos, 10 questions with fast food logos attached, 10 cover sheets to put over the questions (a blank piece of paper usually suffices), 1 answer sheet for each student.

Description of Idea

Lay out 10 stations, each with a different activity to complete. Station ideas include:

*Push ups
*Sit ups
*Jumping jacks
*Plyometric jumps over boxes/ low hurdles
*Medicine ball twists
*Jump rope
*Squats using an exercise ball
*Shuttle runs
*Dribbling a basketball
*Frisbee pass and run

*Lunges
*Tricep dips

You can have any stations you like. I like to include stations that incorporate each of the health-related components of fitness. The stations are arranged so that no successive station works the same aspect of fitness or body part.

On each station card, indicate the number of repetitions the students need to complete e.g. 10 shuttle runs, 20 lunges on each leg etc.

On the back of each station card, stick a picture of a well-known fast food logo.

Around the perimeter of the field house, or area you are using, post 10 corresponding nutrition questions. Cover the question with one of the fast food logos, and cover the fast food logo so that it is not visible to the students unless they lift up the cover.

Students are assigned a station to start at. They complete the activity at the station then have to locate the corresponding question posted around the area. For example, if the student finds the logo for McDonalds on the back of their station card, they have to find the question which also has the McDonalds logo on it and answer it. If students don't find the correct logo they are looking for on the 1st attempt they continue looking for the logo/question they need to answer. This way they can get in a few extra steps. After completing both the activity and answering the question for one station, students then move to the next activity station, completing them in order.

At the end of the activity, students compare answers they came up with to the correct answers. We then discuss which questions they found most surprising and most difficult to figure out.

Assessment Ideas:

*Student answer sheets

*Student projects that incorporate selecting healthy meals from various fast food restaurants

Teaching Suggestions:

For the questions, I used nutritional information available online for a variety of fast food restaurants and turned it into questions. For example, students were asked to select the meal which they thought contained the least amount of fat or calorie, when given a range of choices. I also use the portion distortion quiz, located at

http://hp2010.nhlbihin.net/portion/

to show the students how portion sizes have changed over time.

Adaptations for Students with Disabilities:

The station activities could be adapted to meet the needs of the students, either by offering different stations or by reducing the number of required reps at each station.

Handouts:

Fast Food Quiz Nutrition Questions
Fast Food Quiz Answer Sheet
Fast Food Quiz Resources

Please see the below website to print out the handouts to this above activity:

http://pecentral.com/lessonideas/ViewLesson.asp?ID=8818

TABLE 10.13—Summary of Dietary Recommendations for the American Public

Item	Current dietary intake	Recommendations
Food guide pyramid	Fifty-one percent of children and adolescents eat less than one serving of fruit a day, and 29% eat less than one serving a day of vegetables that are not fried. Nationwide average consumption of fruits and vegetables is: Never, 3.8%; 1 to 2 servings daily, 34.1%; 3 to 4 daily, 38.7%; 5 or more daily, 23.1%. Only 38% of the population are very familiar with the nutrition pyramid, 22% are somewhat familiar, and 40% are unfamiliar.	Vegetables—3 to 5 servings; fruit—2 to 4; meat, poultry, fish, dry beans, eggs, and nuts—2 to 3; milk, yogurt, and cheese—2 to 3; bread, cereal, rice, and pasta—6 to 11
Calories	Most Americans consume excess calories because supersized meals and drinks dominate the convenience store and restaurant market.	Per lb weight, active = 15-16, moderately active = 13-14, and inactive = 10-11
Carbohydrate	46% of daily calories	50%
Simple (concentrated sugars)	24-28%	5-6%
Complex fruits and vegetables	22%	45%
Protein	12-14%	12-35%
Total fat	33-34%: More than 84% of children and adolescents eat too much total fat (i.e., more than 25% of calories from fat), and more than 91% eat too much saturated fat (i.e., more than 10% of calories from saturated fat). On average, young people get 33-34% of their calories from total fat and 12-13% of their calories from saturated fat.	25-30%
Saturated fat	12-13%	5-6%
Monounsaturated fat	10-11%	12%
Polyunsaturated fat	10-11%	12%
Trans-fats		As little as possible; no safe amount determined.
Cholesterol	217 mg for women, 337 mg for men	Less than 300 mg
Salt	4,000-7,000 mg	Less than 2,400 mg (one teaspoon)
Dietary fiber	15 g	25-35 g
Fluid		
Water	4-5 glasses	6-8 glasses, 12-15 if on any type of diet
Alcohol	—	For men, no more than 2 drinks daily (2 beers, 2 glasses of wine [4 oz each], 2 shots of 100-proof vodka, bourbon, scotch); for women, 1 drink daily
Sodas	—	No more than 1-2 daily (includes diet and regular)
Coffee or tea	—	No more than 3 daily

LESSON 4:
Demonstrate the ability to read label.

LESSON FOCUS:
Prepare a report on sources of your common foods that you consume and what nutrients are included in each food.

LESSON PLAN:

1. Explain and conduct an instant activity or the pacer test/run as a warm-up to the activity. This should take approximately 15-20 minutes.
2. Refer to Lesson 3 on the below handouts and follow the instructions on how to implement this lesson.
3. If time permits, conduct a short activity that relates to cardiorespiratory fitness.

Lesson 3:
Get Your Calcium-Rich Foods

Lesson Highlights

Objectives

Students will:
- Identify foods in the milk group.
- Identify the health and nutrition benefits from eating foods rich in calcium.
- Analyze food labels to determine which foods contain the most calcium.
- Compare food labels to determine which calcium-rich foods are lowest in fat.

Curriculum Connections:
Math, Health, Science

Student Skills Developed:
- Reading charts
- Thinking skills – making comparisons
- Math computation

Materials:
- *What's on the Label?* handout for each student
- *What's the Score?* worksheet for each student
- Samples of fat-free, 1%, 2%, and whole milk
- Four plastic glasses (for each student trying the taste test)
- Marker

Activity: What's on the Label?

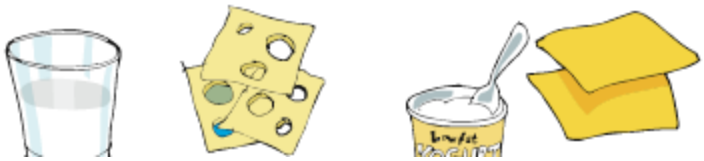
Make the following points about the health benefits of calcium-rich foods:
- Diets that are rich in lowfat and fat-free milk and milk products help build and maintain bone mass.
- Students their age especially need to drink milk, because this is when their bone mass is being built.

Now pass out What's on the Label? handout. Tell students that food labels give them important information about the nutritional value of the food. Discuss the following information with the students:

- Ask students to look for the words "Serving Size" on the labels. In the case of milk, the serving size is 8 fluid ounces – 1 cup.
- Next, have students find first the number of calories in a single serving of the food. Each of the first four labels is for an 8 fluid ounce glass of milk; yet they have a very different number of calories per serving. Why? Because of the fat and sugar content. Look at the calorie content for 1% chocolate milk. It is higher than the calorie content for whole milk. The extra calories come from sugar and chocolate.
- At the bottom of the food label, students will find some numbers followed by percent signs. This is where calcium is listed. Use the % Daily Value (DV) column when possible: 5% DV or less is low, 20% DV or more is high.

Pass out the *What's the Score?* worksheet. Have students complete the chart at the top of the page, filling in numbers from the four nutrition labels for milk. Later, check students' answers.

Next, have students use *What's on the Label?* to help them complete the questions on *What's the Score?* Check student answers and discuss.



Milk fat-free

Nutrition Facts
Serving Size 8 fl oz (245g)
Servings Per Container 8

Amount Per Serving	
Calories 90	Calories from Fat 0
	%Daily Value*
Total Fat 0g	0 %
Saturated Fat 0g	0 %
Trans Fat 0g	0 %
Cholesterol <5mg	0 %
Sodium 130mg	5 %
Total Carbohydrate 12g	4 %
Dietary Fiber 0g	0 %
Sugars 12g	
Protein 8g	
Vitamin A 10% • Vitamin C 4%	
Calcium 30% • Iron 0%	

* Percent Daily Values are based on a 2,000 calorie diet.

Milk 1%, chocolate

Nutrition Facts
Serving Size 8 fl oz (245g)
Servings Per Container 8

Amount Per Serving	
Calories 170	Calories from Fat 20
	%Daily Value*
Total Fat 2.5g	4 %
Saturated Fat 1.5g	8 %
Trans Fat 0g	0 %
Cholesterol 5mg	2 %
Sodium 190mg	8 %
Total Carbohydrate 29g	10 %
Dietary Fiber 1g	5 %
Sugars 27g	
Protein 8g	
Vitamin A 10% • Vitamin C 6%	
Calcium 30% • Iron 4%	

* Percent Daily Values are based on a 2,000 calorie diet.

Milk 2%

Nutrition Facts
Serving Size 8 fl oz (245g)
Servings Per Container 8

Amount Per Serving	
Calories 130	Calories from Fat 45
	%Daily Value*
Total Fat 5g	8 %
Saturated Fat 3g	15 %
Trans Fat 0g	0 %
Cholesterol 20mg	7 %
Sodium 125mg	5 %
Total Carbohydrate 13g	4 %
Dietary Fiber 0g	0 %
Sugars 12g	
Protein 8g	
Vitamin A 10% • Vitamin C 4%	
Calcium 30% • Iron 0%	

* Percent Daily Values are based on a 2,000 calorie diet.

Milk whole

Nutrition Facts
Serving Size 8 fl oz (245g)
Servings Per Container 8

Amount Per Serving	
Calories 150	Calories from Fat 70
	%Daily Value*
Total Fat 8g	12 %
Saturated Fat 5g	25 %
Trans Fat 0g	0 %
Cholesterol 35mg	11 %
Sodium 125mg	5 %
Total Carbohydrate 12g	4 %
Dietary Fiber 0g	0 %
Sugars 12g	
Protein 8g	
Vitamin A 6% • Vitamin C 4%	
Calcium 30% • Iron 0%	

* Percent Daily Values are based on a 2,000 calorie diet.

Vanilla ice cream

Nutrition Facts
Serving Size 1/2 cup (65g)
Servings Per Container 14

Amount Per Serving	
Calories 140	Calories from Fat 70
	%Daily Value*
Total Fat 7g	11 %
Saturated Fat 4.5g	23 %
Trans Fat 0g	0 %
Cholesterol 20mg	6 %
Sodium 40mg	2 %
Total Carbohydrate 15g	5 %
Dietary Fiber 0g	0 %
Sugars 15g	
Protein 3g	
Vitamin A 4% • Vitamin C 0%	
Calcium 10% • Iron 0%	

* Percent Daily Values are based on a 2,000 calorie diet.

American cheese

Nutrition Facts
Serving Size 1 slice (19g)
Servings Per Container 24

Amount Per Serving	
Calories 60	Calories from Fat 40
	%Daily Value*
Total Fat 4.5g	7 %
Saturated Fat 2.5g	13 %
Trans Fat 0g	0 %
Cholesterol 15mg	5 %
Sodium 250mg	10 %
Total Carbohydrate 1g	0 %
Dietary Fiber 0g	0 %
Sugars 1g	
Protein 3g	
Vitamin A 4% • Vitamin C 0%	
Calcium 20% • Iron 0%	

* Percent Daily Values are based on a 2,000 calorie diet.

Fruit-flavored yogurt

Nutrition Facts
Serving Size 6 ounces (170g)
Servings Per Container 1

Amount Per Serving	
Calories 170	Calories from Fat 15
	%Daily Value*
Total Fat 1.5g	2 %
Saturated Fat 1g	5 %
Trans Fat 0g	0 %
Cholesterol 10mg	3 %
Sodium 125mg	5 %
Total Carbohydrate 33g	11 %
Dietary Fiber 0g	0 %
Sugars 30g	
Protein 6g	
Vitamin A 0% • Vitamin C 0%	
Calcium 20% • Iron 0%	

* Percent Daily Values are based on a 2,000 calorie diet.

Cottage cheese

Nutrition Facts
Serving Size 1/2 cup (119g)
Servings Per Container 4

Amount Per Serving	
Calories 90	Calories from Fat 20
	%Daily Value*
Total Fat 2.5g	4 %
Saturated Fat 1.5g	8 %
Trans Fat 0g	0 %
Cholesterol 15mg	5 %
Sodium 410mg	17 %
Total Carbohydrate 6g	2 %
Dietary Fiber 0g	0 %
Sugars 5g	
Protein 11g	
Vitamin A 4% • Vitamin C 0%	
Calcium 8% • Iron 0%	

* Percent Daily Values are based on a 2,000 calorie diet.

What's the Score?

Here is a way to compare foods to see which foods are the best choices for you. Answer the questions below for these four foods, using *What's on the Label?*

	Fat-free milk	1% chocolate milk	2% milk	Whole milk
1. What is the serving size for this item?				
2. Is the serving size realistic? *(Is this how much you would normally eat/drink?)*				
3. How many total calories in one serving?				
4. How many total grams of fat in one serving?				
5. What percent of calcium in one serving?				

Based on this information, which type of milk offers the most calcium with the lowest fat?

_____

Now look at *all* the labels on the page. Answer these questions:

1. If Manuel drinks 8 fluid ounces of 1% chocolate milk and eats 6 ounces of fruit-flavored yogurt, how much calcium has he had?_____

   How many grams of fat? _____

2. Which food item on the sheet has the least calcium with the highest amount of fat?

   _____

3. Which food item on the sheet has the most calcium with the lowest amount of fat?

   _____

Serving size

Is your serving the same size as the one on the label? If you eat double the serving size listed, you need to double the nutrient and calorie values. If you eat one-half the serving size shown here, cut the nutrient and calorie values in half.

Calories

Are you overweight? Cut back a little on calories! Look here to see how a serving of the food adds to your daily total. A 5'4", 138-lb. active woman needs about 2200 calories each day. A 5' 10", 174 lb. active man needs about 2900. How about you?

Total carbohydrates

When you cut down on fat, you can eat more carbohydrates. Carbohydrates are in foods like bread, potatoes, fruits, and vegetables. Choose these often! They give you more nutrients than sugars like soda pop and candy.

Dietary fiber

Grandmother called it "roughage," but her advice to eat more is still up-to-date! That goes for both soluble and insoluble kinds of dietary fiber. Fruits, vegetables, whole-grain foods, beans, and peas are all good sources and can help reduce the risk of heart disease and cancer.

Protein

Most Americans get more protein than they need. Where there is animal protein, there is also fat and cholesterol. Eat small servings of lean meat, fish, and poultry. Use skim or low-fat milk, yogurt, and cheese. Try vegetable proteins like beans, grains, and cereals.

Vitamins and minerals

Your goal here is 100% of each for the day. Don't count on one food to do it all. Let a combination of foods add up to a winning score.

Nutrition Facts

Serving Size 1/2 cup (114g)
Servings Per Container 4

Amount Per Serving

Calories 90 Calories from Fat 30

	% Daily Value*
Total Fat 3g	**5%**
Saturated Fat 0g	**0%**
Cholesterol 0mg	**0%**
Sodium 300mg	**13%**
Total Carbohydrate 13g	**4%**
Dietary Fiber 3g	**12%**
Sugars 3g	
Protein 3g	

Vitamin A 80% • Vitamin C 60%
Calcium 4% • Iron 4%

*Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

	Calories:	2000	2500
Total Fat	Less than	65g	80g
Sat. Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2400mg	2400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

More nutrients may be listed on some labels.

Total fat

Aim low: Most people need to cut back on fat! Too much fat may contribute to heart disease and cancer. Try to limit your *calories from fat.* For a healthy heart, choose foods with a big difference between the total number of calories and the number of calories from fat.

Saturated fat

A new kind of fat? No — saturated fat is part of the total fat in food. It is listed separately because it's the key player in raising blood cholesterol and your risk of heart disease. Eat less!

Cholesterol

Too much cholesterol — a second cousin to fat — can lead to heart disease. Challenge yourself to eat less than 300 mg each day.

Sodium

You call it "salt," the label calls it "sodium." Either way, it may add up to high blood pressure in some people. So, keep your sodium intake low — 2400 to 3000 mg or less each day.*

*The AHA recommends no more than 3000 mg sodium per day for healthy adults

Daily value

Feel like you're drowning in numbers? Let the Daily Value be your guide. Daily Values are listed for people who eat 2000 or 2500 calories each day. If you eat more, your personal daily value maybe higher than what's listed on the label. If you eat less, your personal daily value maybe lower.

For fat, saturated fat, cholesterol, and sodium choose foods with a low % *Daily Value.* For total carbohydrate, dietary fiber, vitamins and minerals your daily value goal is to reach 100% of each.

g = grams (About 28 g = 1 ounce)
mg = milligrams (1000 mg = 1 g)

Key Words:

Fat free: Less than 0.61 g of fat per serving; ***Low fat***: 3 g of fat or less per serving; ***Lean***: Less than 10 g of fat, 4 g of saturated fat and 96 mg of cholesterol per serving; ***Light (Lite)***: one half less calories or no more than one half the fat of the higher-calorie, higher-fat version; or no more than one half the sodium of the higher-sodium version; ***Cholesterol free***: Less than 2 mg of cholesterol and 2 g or less of saturated fat per serving. ***To make health claims about the food must be*** *heart disease and fats*: low in fat, saturated fat and cholesterol: *blood pressure and sodium*; low in sodium; *heart disease and fruits, vegetables, and grain products*; a fruit, vegetable, or grain product low in fat, saturated fat and cholesterol, that contains at least 0.6 g soluble fiber, without fortification, per serving.

Figure 10.4 Nutrition label.

LESSON 5:
Describe and analyze Fiber intake.

LESSON FOCUS:
Complete a daily record and analyze in a report of your daily fiber intake

LESSON PLAN:

1. Explain and conduct an instant activity or the pacer test/run as a warm-up to the activity. This should take approximately 15-20 minutes.
2. After the main lesson and cool down assign students to analyze their daily fiber intake and complete a one page report on their personal findings on their fiber intake based off of the Discover Activity 10.2/Estimating Your daily Fiber Intake. Explain to the students the importance of eating fiber-containing foods.
3. Another activity that students can choose from is the Discovery Activity 10.1/Estimating Caloric Expenditure. Explain to students how the activity is conducted.
4. When students complete the activity they can be placed into groups to discuss their results.
5. Have students submit their Activity 10.1 at the end of the class.

Discovery Activity 10.2

Estimating Your Daily Fiber Intake

Name _____ **Date** _____

Instructions: Record in the space provided all the fiber-containing foods you eat for a period of 3 days. Remember that you must keep records only of the amount and portion size of all fruits, vegetables, and grains eaten.

To help you estimate the grams of fiber in each food item consumed, see table 10.2. Now record in the last column the number of grams of dietary fiber you consume in each food daily. Divide the total grams by three to determine your average daily intake.

Record of Daily Fiber Intake

Day	Food item	Size or amount	Grams of fiber
1	Fruits:_____	_____	_____
	Vegetables:_____	_____	_____
	Grains:_____	_____	_____
2	Fruits:_____	_____	_____
	Vegetables:_____	_____	_____
	Grains:_____	_____	_____
3	Fruits:_____	_____	_____
	Vegetables:_____	_____	_____
	Grains:_____	_____	_____

Total grams of dietary fiber in 3 days _____

Average grams per day _____

Recommended daily intake = 35 grams

Additional daily fiber needed _____

Are you consuming at least 35 grams of dietary fiber daily? ___ Yes ___ No

From *Physical fitness and wellness, third edition*, by Jerrold S. Greenberg, George B. Dintiman, and Barbee Myers Oakes, 2004, Champaign, IL: Human Kinetics.

Discovery Activity 10.1

Estimating Caloric Expenditure

Name _____ **Date** _____

Instructions: The energy needs of your body depend on three factors: (1) body size, (2) age, and (3) the type and amount of your daily physical activity. Your basal metabolic rate (BMR) and caloric expenditure in normal daily activities combine to represent your required energy needs. Complete these steps to estimate your total caloric expenditure. Locate your height on scale 1 and your weight on scale 2 in figure 10.7. Using a straight edge, connect the appropriate points on scales 1 and 2. The intersection of this line with scale 3 is your body surface area.

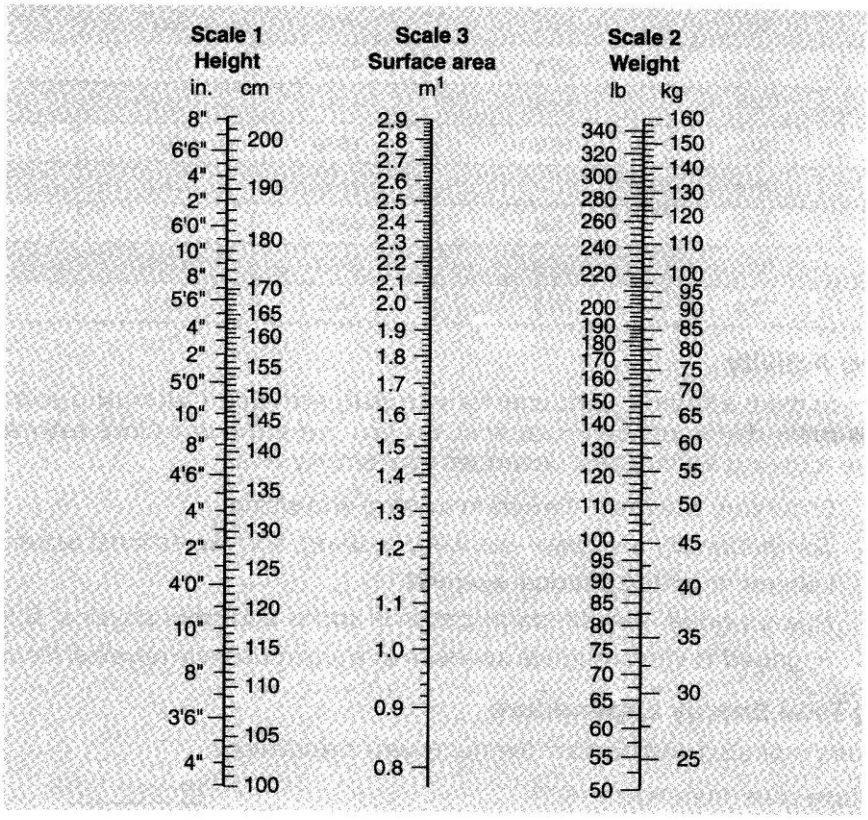


Figure 10.7 Body surface area.

Identifying BMR

Locate your BMR according to the values in table 10.A.

TABLE 10.A—Basal Metabolic Rate by Age and Gender

Age	Men	Women	Age	Men	Women
10	47.7	44.9	13	44.5	40.5
11	46.5	43.5	14	43.8	39.2
12	45.3	42.0	15	42.9	38.3

(continued)

Discovery Activity 10.1 *(continued)*

TABLE 10.A *(continued)*

Age	Men	Women	Age	Men	Women
16	42.0	37.2	32	37.2	34.9
17	41.5	36.4	33	37.1	34.9
18	40.8	35.8	34	37.0	34.9
19	40.5	35.4	35	36.9	34.8
20	39.9	35.3	36	36.8	34.7
21	39.5	35.2	37	36.7	34.6
22	39.2	35.2	38	36.7	34.5
23	39.0	35.2	39	36.6	34.4
24	38.7	35.1	40-44	36.4	34.1
25	38.4	35.1	45-49	36.2	33.8
26	38.2	35.0	50-54	35.8	33.1
27	38.0	35.0	55-59	35.1	32.8
28	37.8	35.0	60-64	34.5	32.0
29	37.7	35.0	65-69	33.5	31.6
30	37.6	35.0	70-74	32.8	31.1
31	37.4	35.0	≥75	31.8	

Determining Activity

To your BMR you must add the caloric cost for your daily activities. Calculating your precise daily energy needs every day would be impractical, but you can arrive at a close estimate. Select the figure from the following list that best describes your activity level:

40% Sedentary activities—limited to walking and sitting

50% Semisedentary activities—standing, walking, and recreational activities

60% Laborer or limited physical exercise

70% Heavy worker—regular participation in sports and other physical activities

80% Engaged in intercollegiate sports or in a vigorous daily physical fitness program

Calculating Total Energy Expenditure

Enter the values indicated and perform the necessary calculations.

1. Body surface area (from figure 10.7) _____
2. BMR factor (from table 10.A) × _____
3. BMR per hour at rest (step 1 × step 2) = _____
4. Number of hours in a day (24) × _____
5. BMR per day at rest (step 3 × step 4) = _____
6. Activity level (enter .40, .50, .60, .70, or .80) × _____
7. Activity calories (step 5 × step 6) = _____
8. BMR per day at rest (enter number from step 5) + _____

Total energy expenditure (total calories per 24 hours) = _____

From *Physical fitness and wellness, third edition*, by Jerrold S. Greenberg, George B. Dintiman, and Barbee Myers Oakes, 2004, Champaign, IL: Human Kinetics.

LESSON 6:
Dispel common nutritional myths.

LESSON FOCUS:
Service-Learning Activity for Principles of Exercise
Conduct a workshop or presentation on how to eat in a healthy way. Create fliers announcing the workshop throughout the school, and include handouts to the participants of the workshop.

LESSON PLAN:

1. Distribute the Discovery Activity 10.3/Service-Learning for Nutrition to the class. See below activity sheet.
2. Have the students select and teach an ethnic or cultural minority population how to eat in a healthy way, consistent with a food guide pyramid specific to that group's eating habits and preferences.
3. This could be an individual or partner presentation to the class that also provides handouts to the participants.

Discovery Activity 10.3

Service-Learning for Nutrition

Many people are familiar with the food guide pyramid distributed by the federal government to encourage Americans to eat healthy, balanced diets. The foods cited in the food guide pyramid, however, may not be appealing to all ethnic or cultural groups. Although not nearly as well known as the original food guide pyramid, adaptations that account for cultural or ethnic preferences are available. For example, there is a food pyramid for vegetarians[1], a food guide pyramid with a Mexican flavor[2], a Puerto Rican food guide pyramid[3], an east African eating guide for good health[4], a Native American food guide[5], a southeast Asian food guide[6], and food guide pyramids for other populations as well (for example, Jewish and Chinese[7]).

Select and teach an ethnic or cultural minority population how to eat in a healthy way, consistent with a food guide pyramid specific to that group's eating habits and preferences. You could conduct this workshop in a community center, a school, or a social hall used by this population for meetings and social gatherings. Local supermarkets may allow you to post flyers announcing the availability, date, and place of the workshop. The supermarket may also be willing to provide sample foods for distribution and demonstration during the workshop. Make sure to leave the participants with a handout that includes the food guide pyramid appropriate to the specific population. In that way, participants will more easily be able to develop eating patterns in their homes consistent with recommendations for healthy, balanced diets.

[1]Prouix, Lawrence G. "Feeding the Vegetarian Child," *Washington Post,* June 20, 1997, p. 20.

[2]University of California Agricultural and Natural Resources, 800-994-8849.

[3]Hispanic Health Council, University of Connecticut, Department of Nutrition With the COOP Extension, and the Connecticut State Department of Social Services.

[4]Washington State Department of Health Warehouse Materials Management, 360-664-9046.

[5]Ibid.

[6]Ibid.

[7]Penn State Nutrition Center, Multicultural Pyramid Packet, 4 Henderson Building, University Park, PA 16802, 814-865-6323.