

Level

1

FOUNDATIONS

OF RESTAURANT MANAGEMENT & CULINARY ARTS
SECOND EDITION



**Teacher's
Companion**

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Preface

Our objective with this program is simple yet significant:

Provide an industry-driven curriculum that prepares students for a career in restaurant and foodservice management.

To achieve that objective, *Foundations of Restaurant Management & Culinary Arts, Second Edition* was meticulously developed by the National Restaurant Association with input and contributions from countless representatives from both industry and education. That balanced perspective is important in helping students make the connection between classrooms and careers.

The student textbooks offer many distinguishing features such as:

- Comprehensive coverage of culinary and management topics
- An industry-infused approach
- Relevant and timely topics from leadership skills to sustainability
- Content aligned to certificates and ProStart program opportunities
- Certificate opportunities that meet funding requirements
- Supplements and technologies that help educators do more in less time

We offer a pedagogy that is fortified by 21st Century Learning themes and objectives:

- Critical thinking and problem solving
- Communication and collaboration
- Creativity and innovation
- Global awareness
- Health literacy

Thank you for considering *Foundations of Restaurant Management & Culinary Arts, Second Edition*!

Table of Contents

<i>Preface</i>	iii
1 • Welcome to the Industry	1
2 • Career Opportunities	10
3 • Professional Expectations	20
4 • Communication Skills	28
5 • Beginning Your Career	38
6 • Introduction to Food Safety	51
7 • Hygiene and Cleanliness	63
8 • The Safe Flow of Food	74
9 • Risk Management	87
10 • Workplace Safety Procedures	99
11 • Foodservice Equipment	111
12 • Knives and Smallwares	120
13 • Kitchen Basics	133
14 • Culinary Math	144
15 • Salads, Dressings, and Dips	157
16 • Sandwiches and Pizzas	170
17 • Stocks, Soups and Sauces	180
18 • Cooking Methods	196
19 • Introduction to Baking	209
20 • Principles of Great Service	221
21 • Front-of-the-House Basics	231
22 • Intro to Management	248

Chapter 1

Teacher's Companion

CHAPTER OVERVIEW

This chapter introduces the students to the restaurant and foodservice industry by describing its history and its current shape.

CHAPTER OBJECTIVES

- 1.1 Identify the two segments of the restaurant and foodservice industry, and give examples of businesses in each of them.
- 1.2 Categorize the types of businesses that make up the hospitality, lodging, and tourism industries, and identify their foodservice opportunities.
- 1.3 Outline the growth of the hospitality industry throughout the history of the world, emphasizing growth in the United States.
- 1.4 Explain the importance of Carême and Escoffier's contributions to the growth of the foodservice industry.
- 1.5 Explain the impact of entrepreneurship on the growth of the foodservice industry.

ADVANCE PREPARATION

Review	• Chapter 1, pages 6–23 • Unit case study, "Overview of the Restaurant and Foodservice Industry," pages 4–5 • Local, state, and federal regulations addressing the restaurant and foodservice industry
Contact	• Local leaders in the restaurant and foodservice industry • State restaurant association • Local and state chapters of other foodservice and hospitality organizations
Prepare	• College magazine, newspaper, and Internet articles on topics involving restaurants and foodservice for class discussion. • Develop a list of websites that address hospitality matters and prepare it for distribution to the class.

CHAPTER BREAKDOWN

PAGES 8–9

INTRODUCTION

Discuss

- Why is the restaurant and foodservice industry so important to the American economy?
- Ask students how our society has shaped this industry. For example, home meal replacement is relatively new to the foodservice industry. Why?
- Ask students about their favorite restaurant experiences. What made the event so memorable—the food, the atmosphere, the service, the people who shared the experience?

Customized Instruction (one per section)

Learning disabled	Create a vision board using photos or images that describe what your career will look like from now until 10 years from now.
Academically gifted	Research the number of people employed in the United States, in all industries. What fraction of the employment rate is of those employed in the restaurant and foodservice industry? Based on the year 2016, if 1.7 million jobs are available by 2025, and the rate grows the same each year, how many new jobs will be available by 2025?
ELL	Create a poster featuring different jobs that interest you in the foodservice and restaurant industry.

PAGES 10–12

THE RESTAURANT AND FOODSERVICE INDUSTRY

Reinforce and Review

- Reinforce the role of service and how it relates to both “image” and “end result.”
- Review the differences between commercial and noncommercial foodservice: noncommercial foodservice establishments provide food in support of some other primary goal, while for commercial foodservice establishments, providing food is the primary goal.
- Review the definitions, services offered, and price ranges of each restaurant segment.

Discuss

- Discuss why the commercial segment of foodservice is so much larger than the noncommercial segment.
- What exactly is a service industry? Ask students to identify other examples of service industries.
- Describe the dining options typically available on luxury cruises and airplanes.
- Make sure students understand the difference between stadium contract feeders and having outright ownership of concessions (self-operating).
- Discuss the importance of the noncommercial foodservice segment in today’s society.

Vocabulary Review

- **Concept:** A restaurant's unique combination of menu offerings, pricing, service style, ambiance, and décor.
- **Contract feeding:** Situation in which an outside contractor manages and operates the employee dining facilities for a business or company.
- **Self-operators:** Companies that hire their own staff to operate foodservices.

Homework Activity: Physical

Have students design a plan and concept for their own food truck. Have students draw the diagram of the inside, and build models of what the outside will look like.

Homework Activity: Math

What's the Real Cost?

- Ask students to list the prepared food that they purchase in a typical week for dinner (not including snack foods, soda, and the like).
- Students should research the cost to purchase the prepared items and the time spent to obtain them.
- Then students should list the ingredients that would be required to make each dish from scratch at home, research these costs, and estimate the time it would take to prepare each item (including the time it takes to purchase the ingredients).
- Use this information as the basis for a class discussion.

In-Class Activity: Literacy

Restaurant Segments

- Ask students to create a chart with five columns, each headed by one of the five restaurant segments shown in Table 1.1. Give students a five-minute period in which to list as many restaurants under each heading as possible. When time is up, ask students to share their lists with the class.
- Discuss whether restaurants have been properly categorized.

Homework Activity: Writing

Stadium Contract Feeders

Ask students to research a stadium contract feeder of their choice and write a brief essay describing its offerings, its customers, and its history.

Customized Instruction

Learning disabled	Create a poster using found images assigned to each of the segments in the commercial and noncommercial segments. Pages 10–12.
Academically gifted	Research the bidding process for contractors in the noncommercial segment, for two segments—school foodservice and health-care facilities. Why would a business choose contract feeding over self-operation? What are pros and cons of each side? Present the facts found in a presentation, using the delivery method of your choice.
ELL	Use Table 1.1 to create a graphic organizer to show what a meal looks like and what it costs for each of the listed restaurant segments. For example, a student could choose Chuck E. Cheese, draw or clip an image of pizza and soda, and show that the meal is \$10.00 or less. Repeat this activity with the other commercial and noncommercial segments. Have students connect an image of the venue (for example, a stadium for one of the commercial segments) with a common meal or delivery method for that meal that might be served at the venue (for example, hot dogs and peanuts for a stadium).

Reinforce and Review

- Review the difference between hospitality and travel and tourism.
- Review the relationships among travel and tourism, hospitality, and restaurants and foodservice.

Discuss

- Encourage students to give examples of travel and tourism services.
- How can travel and tourism contribute to the local economy? Is this always a positive development? Ask students to give examples of both positive and negative outcomes.

Vocabulary Review

- **Travel and tourism:** The combination of all of the services that people need and will pay for when they are away from home.
- **Tourism:** Travel for recreational, leisure, or business purposes.
- **Hospitality:** Refers to the services that people use and receive when they are away from home, including restaurants and hotels; also refers to the feeling that guests take with them from their experience with an operation—the service, care, attention, and even physical environment.

Customized Instruction

Learning disabled	Ask students to research their dream vacation. Create a poster or presentation to detail the information found—location, transportation, lodging, meals—and the cost for each item. Watch the film <i>Cars</i>. What message does the film explain about travel and tourism, past and present?
Academically gifted	Design a board game similar to Monopoly or Life that describes a travel journey someone might have driving across the country on Route 66. Begin by researching the history of Route 66, and then create a game that might show some of the positive and negative experiences. Write a history of the National Parks in America. Choose three parks to focus on more in depth, and describe the main attractions in an essay.
ELL	Create a graphic organizer to show and explain this content: “Restaurants and foodservice are a component of the hospitality industry. In turn, hospitality falls under the umbrella of the travel and tourism industry” (13). Use images, drawings, screenshots, or video clips to build the answer.

Knowledge Check Answers (Page 13)

- Family dining full-service restaurant: Serving staff provides service, and the order is taken while the patron is seated. Patrons pay after they eat. Average per-person check is \$10 or less.
 Casual dining full-service restaurant: Serving staff provides service at the table, and the order is taken while the patron is seated. Patrons pay after they eat. Average per-person check is \$10–\$25.
 Fine dining full-service restaurant: Serving staff provides service at the table, and the order is taken while the patron is seated. Patrons pay after they eat. Average per-person check is \$25 or more.
 Quick-service restaurant: Establishments primarily engaged in providing foodservice where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered. Also includes snack and nonalcoholic beverage bar. Average per-person check is \$3–\$6.
 Quick-casual restaurant: Attractive and comfortable establishments serving freshly prepared, wholesome, quality, authentic foods in reasonably fast-service format. Average per-person check is \$7–\$9.
- Hospitality refers to the services that people use and receive when they are away from home. Travel and tourism is the combination of all of the services that people need and will pay for when they are away from home.

Homework Activity: Science

Food in Flight

International airline travel offers a variety of meals. These may include breakfast, lunch, and/or dinner. In addition, there are special requests, such as Kosher or Halal foods. Ask students to research how these foods are provided to the airline and how they are kept “safe” on board until served.

PAGES 14–20

THE HISTORY OF THE RESTAURANT AND FOODSERVICE INDUSTRY

Reinforce and Review

- Make sure students understand that haute cuisine became the basis for contemporary Western fine dining and had a significant effect on everyday eating habits as well.
- Review the rise of guilds and their effect on French society.
- Reiterate the importance of Boulanger and his *restorante* to the contemporary restaurant and foodservice industry.
- Review the roles of chefs throughout history and their contributions to the industry.

Discuss

- Explain the rise of guilds. How do they relate to contemporary labor unions? What role did they play in the French economy?
- Many early colonists came to America to practice religious freedom. Encourage students to discuss the relationship between religion and food.
- Cafeterias were the foodservice industry’s version of the Industrial Revolution. Ask students to think through the differences between cafeterias and luxurious restaurants like Delmonico’s—staffing, ingredients, resources, and so on.
- Discuss the importance of Marie-Antoine Carême and Georges August Escoffier to the restaurant and foodservice industry. Encourage students to discuss how these chefs are relevant to today’s hospitality industry.
- Ask students to identify other notable entrepreneurs, chefs, or restaurants. How have each contributed to society?

Vocabulary Review

- **Lesche:** Private clubs in ancient Greece that offered food to members.
- **Phatnai:** Establishments in ancient Greece that catered to travelers, traders, and visiting diplomats.
- **Epicurean:** Showing great appreciation for fine wine and food.
- **Haute cuisine:** An elaborate and refined system of food preparation.
- **Café:** Another name for a coffeehouse; cafés first became popular in Renaissance Europe.
- **Guilds:** Associations of people with similar interests or professions, first started in France during the reign of Louis XIV.

- **Restorante:** The name Boulanger gave to his café of the 1760s that served hot soups called *restaurers*; also the origin of our modern word *restaurant*.
- **Cafeteria:** An assembly-line process of serving food quickly and cheaply without the need for servers.
- **Entrepreneur:** A person who starts and runs a business, taking on financial risk to do so.
- **Expediter:** Staff member in Escoffier's kitchen brigade system who takes orders from servers and calls out the orders to the various production areas in the kitchen.

Customized Instruction

Learning disabled	Create posters to describe the evolution of the foodservice era, from ancient Greece to today. Break each category into its own poster, to create a visual historical time line. Choose a celebrity chef that is your favorite, and give a short presentation on his/her biography and why he/she is your favorite chef.
Academically gifted	Research the history of the spice trade and its impact across the globe over time. Write an essay to describe your findings. Research and discover recipes that may be historically accurate for each of the eras found on pages 14–17. Create a recipe book to share with the class. If possible, turn one recipe into a full-class demo.
ELL	Create a word wall to describe the vocabulary from the section. Match words with the era in which they belong—if possible, use the historical time lines from the above activity.

Homework Activity: Writing

Entrepreneurial Enterprises

Students should each select one of the leading chefs mentioned in this chapter and research his or her career and write a brief essay about the factors that are responsible for the chef's success.

Knowledge Check Answers (Page 20)

1. Ancient Greece: Rome conquered the lands surrounding the Mediterranean Sea, formerly occupied by the Greeks in 282 BC. The Roman Empire subsequently expanded to the west, east, and north, coinciding with popular desires for exotic foods and spices.

The Renaissance: World trade and travel increased, and Venice was the center of the lucrative spice trade. Haute cuisine developed during this period as international trade exposed Europeans to such innovations as drinking coffee and enjoying cafés. Guilds protecting various industries arose, establishing professional standards and traditions in foodservice that exist today, and the first restaurant was established in 1765. The French Revolution paved the way for more restaurants.

The Gilded Age: The Enlightenment concept of progress, measured in production and profit, meant long hours and low wages for workers along with increased profits for owners. This enabled the rich to dine stylishly in such elegant restaurants as Delmonico's and the Astor House. The 1848 gold rush also contributed to the spread of fine restaurants as well as to the cafeterias, which catered to the less wealthy.

Twentieth Century: Increased employment initially led to the spread of dining out, especially at restaurants specializing in lunch service. The discovery of vitamins also increased popular interest in healthy eating habits. Although the Great Depression closed many restaurants, the lodging and foodservice industries prospered during World War II. Later, developments in transportation, including a new interstate freeway system, improved access to automobiles, and the emergent airline industry, contributed to the continued success of lodging and foodservice establishments—particularly for quick-service restaurants and national chains.

2. An expeditor, or *aboyeur*, takes orders from servers and calls out the orders to the various production areas in the kitchen.
3. An entrepreneur is a person who starts and runs a business, taking on financial risk to do so.

PAGE 21

**CASE STUDY FOLLOW-UP ANSWERS:
“OVERVIEW OF THE RESTAURANT AND FOODSERVICE INDUSTRY”**

1. Student answers may vary. Possible responses include excellent customer-service skills, commercial awareness, good interpersonal skills, communication skills, problem-solving skills, organizational skills, teamwork skills, and flexibility.
2. Students may answer this question in a variety of ways, so long as they justify their response. Possible responses include any of the historic advances in the industry, such as the rise of fine dining in the late nineteenth century or the growth of quick-service chains that compete for guests' business. See pages 14–17 to reference.

PAGE 22

CHAPTER ACTIVITY ANSWERS

- **Advancement in Foodservice:** Students should choose one of the historic advances, such as cafeteria service or the rise of quick-service chains, and discuss how it changed the restaurant and foodservice industry, using examples to justify their selection. See pages 15–17.
- **Understanding Canning:** There are two methods to canning. The first method is water bath canning, which is ideal for high-acid foods such as fruits and vegetables. The acidity in the foods kills bacteria. The second method is pressure canning, which is ideal for low-acid foods such as meats, poultry, and seafood. Foods are heated to 240°F (116°C) to eliminate the risk of foodborne bacteria. Originally, it was believed that the presence of air led to spoiling, but heat is what causes spoilage. Canning extends a food's shelf life. It is believed that canned fruits and vegetables are just as healthy as fresh or frozen fruits and vegetables.
- **Tracking the Time Line:** Students should create a time line using 10 historic events/advancements in the foodservice industry. Then they should figure out the number of years between each of those events. By adding those numbers together and dividing by 9 (the number of eras in between the 10 events), students will find an average number of years between major events/advancements. See pages 14–17 for possible events/advancements.
- **List It:** Student answers will vary. Possible responses include: Commercial foodservice operations restaurants, catering and banquets, retail, stadiums, airlines and cruise ships. Noncommercial foodservice operations: schools, military bases, health-care facilities, businesses, clubs and member-based facilities. See pages 10–13.

- **Chef Mentors:** Students may answer this question in a variety of ways, from the content on pages 18–20. Students may discuss Escoffier’s brigade system, the positions within that system, and how, with a mentor, a professional can progress through the system and industry positions, eventually becoming a chef, with the assumption that he/she has progressed with an accepted base of foodservice and kitchen knowledge.
- **Entrepreneurial Vision:** Students may answer this question in a variety of ways, from pages 17–20. Possible answers can include Richard Melman and his Lettuce Entertain You Enterprises or Howard Schultz and the rise of Starbucks and how these entrepreneurs affected the industry at first, as well as how those effects apply today. Students may choose an entrepreneur from the foodservice industry not mentioned in the text.

PAGE 23**EXAM PREP ANSWERS**

1. C (p. 11)

5. D (p. 14)

8. B (p. 16)

2. D (p. 15)

6. B (p. 19)

9. C (p. 17)

3. A (p. 12)

7. D (p. 18)

10. B (p. 16)

4. B (p. 13)

Chapter 2

Teacher's Companion

CHAPTER OVERVIEW

The chapter discusses a wide variety of career options in the restaurant and foodservice industry, the skills needed to have a successful career, and the benefits of being healthy and well.

CHAPTER OBJECTIVES

- 2.1 Identify the two major categories of jobs in the restaurant and foodservice industry.
- 2.2 Identify skills needed by foodservice professionals.
- 2.3 Identify career opportunities in the restaurant and foodservice industry.
- 2.4 List factors for maintaining health and wellness throughout a restaurant or foodservice career.
- 2.5 Explain the importance of time management.
- 2.6 List barriers to effective time management, and identify strategies to overcome them.
- 2.7 Explain the importance of professional development and list ways to achieve it.

ADVANCE PREPARATION

Review	- Chapter 2, pages 24–41 - Unit case study, “Overview of the Restaurant and Foodservice Industry,” pages 4–5
Contact	- Local restaurant and foodservice workers - If available, a representative of the school’s adult mentoring program
Prepare	Collect magazine, newspaper, and Internet articles on restaurant and foodservice careers.

CHAPTER BREAKDOWN

PAGE 26

INTRODUCTION

Discuss

- Discuss the variety of career paths available in the restaurant and foodservice industry.
- Discuss the skills needed to succeed in this industry. Why are they important? What other skills are important to have? How do all these skills apply to other career paths?

PAGES 26–28

FOODSERVICE CAREER PATHWAYS

Reinforce and Review

- Front-of-the-house employees serve guests directly, while back-of-the-house employees serve guests indirectly by serving the “internal customers” who then serve the guests.
- Entry-level jobs are an important part of the foodservice industry, introducing ambitious employees to the industry while performing tasks that are vital to a positive guest experience.
- Higher-level jobs usually require more education and training. They can either be stops along the career path or ends in themselves.
- Video: Entry-Level Jobs: This animation shows some of the common entry-level jobs and duties in the foodservice industry, based on the content from pages 27–28. The animation can be found at Textbooks.Restaurant.org/Videos.

Discuss

- Front-of-the-house and back-of-the-house employees are all service professionals, although some serve guests directly and others indirectly. What does it mean to be a service professional? What characteristics are required?
- Now that chef’s tables are common and celebrity chefs are everywhere, what new skills do back-of-the-house employees need that would have been unnecessary a few decades ago?
- Entry-level jobs are the starting point for most careers in the restaurant and foodservice industry. Although these jobs are not always exciting, the tasks these employees perform are crucial to the guest’s experience. Ask students to identify entry-level jobs in other industries.

Vocabulary Review

- **Front of the house:** Refers to the foodservice employees who serve guests directly; front-of-the-house positions include managers, assistant managers, banquet managers, dining room managers, maître d’s, hosts/hostesses, cashiers, bar staff, serving staff, and busers.

- **Back of the house:** Refers to foodservice employees who work outside the public space; back-of-the-house positions include chefs, line cooks, pastry chefs, crew (or shift) supervisors, dish washers, bookkeepers, storeroom clerks, purchasers, dietitians, and menu planners.
- **Entry-level job:** A job that requires little or no previous experience; entry-level jobs are an important starting point for all career pathways and usually lead to other positions with more responsibility that require more experience and/or specialized skills.

Customized Instruction

Learning disabled	Create a diagram of the front of the house and the back of the house. Create drawings of the various positions (or find photos in magazines or online to cut out), and model the primary responsibilities as listed in Table 2.1 and 2.2.
Academically gifted	Research the traditional positions included in the kitchen brigade. Write a response with your findings, including a discussion of the types of tasks and responsibilities each position may have, and the type of menu that would require a traditional brigade.
ELL	Create visual definitions for the vocabulary words listed on page 25. Use the Internet to search for images or short videos that help define the key terms.

Knowledge Check Answers (Page 28)

1. Front-of-the-house employees serve guests directly and include managers, assistant managers, hostesses, cashiers, servers, and busers. Back-of-the-house employees work outside the public space and include chefs, line cooks, pastry chefs, and dish washers.
2. An entry-level job is one that requires little or no experience. Entry-level jobs usually lead to other positions with more responsibility. Entry-level jobs in foodservice include host/hostess, buser, server, and dish washer.
3. Student answers will vary, but students should use Table 2.1 and Table 2.2 for suggestions.

PAGES 29–31

SKILLS NEEDED FOR A SUCCESSFUL CAREER

Reinforce and Review

- People advance in their careers by mastering the skills they need for their current jobs and demonstrating the ability to take on fresh responsibilities.
- Communication and teamwork play vital roles in both an employee's professional growth and in the daily business of an establishment.
- Keeping a positive and enthusiastic outlook at work is always important, although it can be challenging when problems arise.
- Video: Skills Needed for a Successful Career: Based on the content from pages 29–30, this video shows examples of skills needed in the foodservice industry throughout one's career, to be successful. The video can be found at Textbooks.Restaurant.org/Videos.
- Essential Skills: Making the Most of a Mentor on page 31 lists the ways students can work with a mentor.

Discuss

- What career choices within the foodservice industry interest students and why? What are some attractive options outside this industry?
- How can moving laterally become a step ahead?
- How do communication and teamwork play roles in all career paths?
- Coworkers, employers, and guests value enthusiasm and optimism. Encourage students to suggest other attributes of valued employees.
- How can students find mentors? Who are appropriate people to approach, and why?

Vocabulary Review

- **Career:** A profession or work in a particular field that individuals choose for themselves.
- **Career pathway:** A series of jobs through which people can advance to further their careers.
- **Mentor:** Someone who can play the role of a wise advisor to help guide a person along his or her career path.

Customized Instruction

Learning disabled	Use the Internet or materials from the counselor's office to create a poster of the foodservice careers available in their career pathway (this will vary from state to state).
Academically gifted	Research what mentor you would most like to work with. Write a persuasive essay detailing why the mentor should choose you as a mentee. Use the steps listed on page 31 as a starting point.
ELL	Work in small groups to perform skits to illustrate the skills needed for a successful career (listed on pages 29 and 30). Film the skits to present to the class.

Homework Activity: Writing

My Career Pathway

Choose a career in the foodservice industry that you are interested in. Research the career and write a one-page paper on the educational and job requirements, description of the career, employment outlook, and salary information. Also, identify the career pathway that needs to be taken to get to that career.

PAGES 32–33

A SELECTION OF CAREERS

Reinforce and Review

- The restaurant and foodservice industry is among the nation's leading employers.
- Jobs in foodservice can be varied and unique.

Discuss

- What do all of the careers listed on page 33 have in common?
- What is the difference between a job and a career? For example, cashiers are not on the list on page 33, although someone could choose to spend the majority of his or her working years as a cashier. What is the distinction?

Customized Instruction

Learning disabled	Choose one career opportunity to research from the bulleted list on page 32. Use the Internet to find out more about the job and what college or training is required. Write a short summary. Create posters for each career listed in Table 2.3 on page 33. Create or find images to describe the responsibilities.
Academically gifted	Research opportunities in the following areas, and find three college programs of study for each choice. Create a poster to share with the class. • Food science • Culinary research and development • Nutrition and dietetics • Facilities and engineering • Marketing and sales • Accounting and financial management • Human resources
ELL	Create posters for each career listed in Table 2.3 on page 33. Create or find images to describe the responsibilities.

In-Class Activity: Literacy

Value-Added

Students should identify and write down the following:

- Three ways in which they are valuable to potential employers
- Three ways in which they are valuable to their families
- Three ways in which they are valuable to their friends
- Three ways in which they are valuable to their school

Now think about how these overlap. Are students valuable to their friends in the same ways that they are to their families? Now students should identify and write down three ways in which they could become more valuable to either of these groups and consider how to act on this knowledge in both the short term and long term.

Reinforce and Review

- The most important thing employees can do to ensure that they advance in the restaurant and foodservice industry is to protect and care for their bodies and minds.
- Staying healthy is the key to building skills, gaining experience, and working up the career ladder.
- Stress-management techniques can help people minimize the negative effects of stress on their lives.
- Time-management skills help individuals waste less time on nonessential tasks and focus on important activities.
- Essential Skills: Handling Self-Imposed Pressures on page 36 discusses how students might be able to deal with self-imposed pressures.

Discuss

- How can students protect themselves while being professionals? How can students know how much is too much to do?
- What are some sources of stress in the restaurant and foodservice industry? How can professionals handle these problems?
- Have students experienced any stress indicators as listed on page 34? How do they handle them?
- What are your most important responsibilities each day? What activities take the most time? How are these two areas related?

Vocabulary

- **Stress:** The condition where, or feeling that, demands exceed the resources available for use.
- **Stress management:** A process people use to identify what causes stress for them in the workplace as well as in their personal lives; once a stress is identified, various strategies can be applied to minimize its effects.
- **Time management:** The use of tools to increase a person's efficiency and productivity; the skills needed for effective time management include planning, goal setting, setting priorities, and delegating.

Customized Instruction

Learning disabled	Write skits or film videos using the tips in Table 2.4 for staying healthy. Show how to use the guidelines to stay healthy.
Academically gifted	Research opportunities in your area to find help for stress management—all within the guidelines of the tips for staying healthy. Create a resource guide aimed at high school-aged students to help prevent stress from turning into a serious issue. Present to the class.
ELL	Using the Essential Skills feature on page 36, find or create images or video clips that describe how to handle self-imposed pressures. Write a comic book to describe the tips for stress and time management.

Homework Activity: Physical

Staying Strong

Page 35 lists a number of ways that young employees can find balance and growth in their personal and professional lives. For the next week, take daily walks. Record how far you walked and how long it took you. Keep track of how you feel before you go for a walk and then how you feel after the walk.

Homework Activity: Math

Healthy Recipes

Poor eating habits can take a toll on one's health, which can also cause stress. Sometimes, poor eating habits are caused by lack of time, which is in turn a stress factor. Healthy eating habits, on the other hand, are an important component of a balanced lifestyle.

Design a healthy recipe that your family and friends would enjoy. The recipe should be quick and easy to produce and should include minimal amounts of fat and sugar. It can be for a dish enjoyed at any time of the day.

Record the amounts of each ingredient that you use in the recipe. The U.S. Department of Agriculture has a database where you can learn the nutritional value for each ingredient in the dish. For each ingredient used, list the number of grams of protein, carbohydrate, and fat as well as the total protein, carbohydrates, and fat grams. Why is it important to know these figures? What other nutrients does the dish include?

Homework Activity: Science

Stress Diaries

Keep a diary for one week, identifying when you feel stressed and what you think may have caused the stress. How can you reduce sources of stress in your life? Are there any skills you could learn that might help you better manage your time?

Reinforce and Review

- Part of self-development is being involved in the industry.
- Continuous improvement or professional development is essential for success in the restaurant and foodservice industry.
- Achieving certification through a professional organization is a key way to improve professionally.
- Regular newsletters, workshops, and conferences are some benefits of membership in professional organizations.

Discuss

- Why is it important for young employees to engage themselves with other professionals?
- How can people find a role for self-development in the balance between their work and personal lives?
- Why would someone want to earn professional certifications?
- How is joining a professional organization different from joining a student-based organization? How is it similar?

Vocabulary

- **Networking:** Connecting with several people to build relationships that may result in career advancement, industry updates, and greater knowledge and skill.

Customized Instruction

Learning disabled	Research the National Restaurant Association and American Culinary Federation. How is the ProStart program related, and how can you earn a scholarship? What is the ServSafe exam? Are you interested in taking it? Write a summary of your findings.
Academically gifted	Research the Certified Master Chef certification and exam through the American Culinary Federation. Look for books or articles that describe the process to become a Certified Master Chef. Write a report and present to the class an explanation of the CMC exam. Research and assemble a list of all local networking events for foodservice and restaurant professionals. Attend a networking event and return to present to the class the information shared at the meeting.
ELL	Research local options for college for the culinary arts in your area. How much does it cost per credit hour? How does that compare to other schools, out of the area or out of state? Create a graphic organizer with your research. What are other options for continuing your culinary education, without attending college? Look for information for apprenticeship programs in your area. Create a graphic organizer with all the research you find.

Knowledge Check Answers (Page 38)

1. A mentor is someone who can function as a wise advisor to a younger employee or colleague. A mentor offers insight and feedback on career-development plans and progress.
2. Student responses will vary, but students should refer to Table 2.3 on page 33 for a list of possible careers in the hospitality industry.

3. Steps to a healthy lifestyle include: eating right, exercising, having a work-life balance, taking advantage of resources available, avoiding substance abuse, saving money, and finding a job that makes you happy.
4. Skills needed to effectively manage your time include planning, goal setting, setting priorities, and delegating.
5. Networking is connecting with people to build relationships that may result in career advancement, industry updates, and knowledge or career enhancements.

PAGE 39
**CASE STUDY FOLLOW-UP ANSWERS:
 “OVERVIEW OF THE RESTAURANT AND FOODSERVICE INDUSTRY”**

1. To cope with stress, Michele should develop and implement a stress-reduction plan. Michele can also evaluate her daily activities and try to minimize any unanticipated situations, delegate work or ask others for help, set realistic goals, and get regular sleep and exercise and eat healthy.
2. Michele can stay connected to the industry by joining industry online groups, participating in professional organizations, networking, and completing training and education.

PAGE 40**CHAPTER ACTIVITY ANSWERS**

- **Mentoring:** Student answers will vary. The first paragraph should identify qualities of a good mentor. The second paragraph should describe how to work with a mentor. Refer to pages 30–31.
- **The Purpose of Stress:** Student answers will vary. The report should explain what stress is, what stress can do to the mind and body, and supporting facts of why stress is or is not good, and what role “good” stress plays in our lives. Refer to pages 34–36.
- **Scheduling Your Time:** Student answers will vary, but students should create a detailed spreadsheet, table, or list showing how they spend their time in a week, comparing that to a 40-hour workweek. Refer to the text on stress and time management on pages 34–36.
- **Collaboration: FOH or BOH:** Student presentations will vary. One student should focus on the front of the house, describing the benefits of front of the house work; the other student should focus on the back of the house, describing the benefits of that work. Students can draw from the job descriptions in the text on pages 32–33, as well as from Internet and other reliable sources.
- **Career Readiness: Off the Career Path:** Student answers will vary. Students can draw possible careers from page 26 of the text, as well as from other reliable sources. They should be careers not covered in full in the chapter, but they should be related to the foodservice industry in some way.
- **Critical Thinking: Diagram:** Student answers will vary. Students should draw from the text on pages 26–28 and pages 32–33, choosing three career paths that include at least three positions within each pathway.

PAGE 41**EXAM PREP ANSWERS**

1. C (p. 27)

2. A (p. 33)

3. D (p. 33)

4. A (p. 36)

5. A (p. 29)

6. C (p. 37)

7. D (p. 27)

8. A (p. 26)

9. C (p. 36)

10. C (p. 36)

Chapter 3

Teacher's Companion

CHAPTER OVERVIEW

This chapter introduces students to the basic expectations that restaurant and foodservice operations have of their employees. Topics ranging from image to punctuality to attitude are discussed. The chapter also includes a thorough treatment on building relationships at work.

CHAPTER OBJECTIVES

- 3.1 Define professionalism, and explain what it means to hospitality professionals.
- 3.2 Understand the importance of personal appearance and grooming standards to your employment.
- 3.3 Recognize the connections between your professional life and your personal life.
- 3.4 List the basic expectations that employers have for an employee in a foodservice setting.
- 3.5 Explain the concept of teamwork.
- 3.6 Describe ethics, and explain their importance to the restaurant and foodservice industry.
- 3.7 Identify the benefits of diversity to a workplace.
- 3.8 Explain how stereotypes and prejudices can negatively affect working together.
- 3.9 Identify how employees' roles and jobs impact an organization's mission and goals.
- 3.10 Outline the steps to resigning from a job.

ADVANCE PREPARATION

Review	- Chapter 3, pages 42–55 - Unit case study, "Overview of the Restaurant and Foodservice Industry," pages 4–5 - Campus and district policies regarding respect, diversity, and harassment
Contact	A guest speaker who can discuss workplace issues, such as an HR professional or a general manager
Prepare	A list of websites and articles that address diversity and professionalism

CHAPTER BREAKDOWN

PAGE 44

INTRODUCTION

Discuss

- Encourage the students to think about what being a professional means to them. What unique professional qualities, if any, might be needed to be successful in the restaurant and foodservice industry?
- How is the high school environment similar to and different from the workplace environment?

PAGES 44–47

THE EXPECTATIONS OF AN INDUSTRY PROFESSIONAL

Reinforce and Review

- The first, most basic requirement for employment is to be at your job at the scheduled time. Professionalism begins by showing up when asked.
- Video: The Professional Image: This video walks the student through the professional image expectations for restaurant and foodservice industry professionals, based on the content on pages 44–45. The video can be found at Textbooks.Restaurant.org/Videos.
- A person's attitude and actions while at work also contribute to their level of professionalism.
- The restaurant and foodservice industry relies heavily on teamwork to function. Part of being a good team member is exhibiting a strong sense of personal responsibility.
- A person's ethics are shaped by many factors, but they are typically rooted in honesty, integrity, and respect for others.

Discuss

- Why is it important to have a professional image at work?
- How can working in teams help provide better guest service? In what ways can teams be more, or less, efficient than individuals?
- Why would a business establish a code of ethics? When should it be established, and who should participate in writing it?
- What problems can arise when employees bring their personal values to their jobs? How can this undermine diversity, respect for colleagues, and guest service?

Vocabulary Review

- **Professionalism:** Combination of trained skills, polite and positive behaviors, and good judgment that a person uses at work.
- **Professional image:** Comprised of the expectation for cleanliness and neatness in an employee's appearance every day on the job, which includes everything from clean nails and hands to washed hair and clean, well-maintained, and ironed uniforms, whether in the front or back of the house.

- **Teamwork:** Using each team member's strengths so that the group has more success working together than working alone.
- **Ethics:** Set of moral values that a group of people holds that help guide the decisions they make, typically based on the principles of honesty, integrity, and respect for others; they can be influenced by cultural backgrounds, religious beliefs, personal codes of conduct, and individual experiences.
- **Workplace ethics:** In the business world, these codes set the professional tone and behaviors for employees in an operation and help everyone understand what is considered acceptable or unacceptable behavior.

Customized Instruction

Learning disabled	Create a video based on the "Basic Expectations for Employees" essential skill on page 50. Work in small groups to create visual representations of the 11 steps listed.
Academically gifted	Research Danny Meyer, mentioned in the sidebar on page 46. If possible, read one of his books. How does this relate to emotional skills in the workplace? Write an essay comparing the content of Meyer's book with the content in the chapter.
ELL	Create visual definitions to the vocabulary words listed on page 43. Use the Internet to search for images or short videos that help define the key terms.

Homework Activity: Writing

Ethical Workplaces

Imagine that you own a company of some kind and imagine that your company needs a code of ethics. Draft a code of ethics in your own words, covering all workplace issues that you think are important.

Now envision some problem arising in the workplace. For example, a guest is dissatisfied with his meal, or a server and a cook are having problems communicating professionally. How can your code of ethics help you and your employees know what to do?

Attach a discussion of the "problem" to your code of ethics.

Homework Activity: Science

The Science of Being a Professional

The term *professional* is thrown around quite a bit these days. But what exactly does it mean to be a professional? Research five practical traits and/or skills, such as being on time, that you think define a foodservice professional.

Knowledge Check Answers (Page 47)

1. Professionalism is the combination of trained skills, polite and positive behaviors, and good judgment a person uses at work.
2. Ethics are a set of moral values that a group of people holds.

3. The advantages of teamwork are: team members can learn from each other; people bring different skills and experiences to problem solving and can come up with solutions that one person would not have thought of, several people working together can get more done than individuals working on their own; and team members can support each other during difficult projects.

PAGES 48–50 | YOUR RELATIONSHIPS AT WORK

Reinforce and Review

- In a diverse environment, people must learn to value and respect others, regardless of their differences. Once that respect exists, the team can often learn to leverage each other's strengths.
- Stereotypes are hard to change, because they are rarely based on actual experience. But they can be changed by gaining exposure to situations that do not meet the stereotype. Empathy is a key tool for reversing stereotypes.
- Allowing prejudiced or hostile behaviors in the workplace creates a hostile environment for all employees. Neither managers nor employees should tolerate prejudice or bias.
- Video: Feedback: This video shows how positive and negative feedback plays a role in professional growth throughout one's career, based on the content from pages 48–50. The video can be found at *Textbooks.Restaurant.org/Videos*.
- Essential Skills: Basic Expectations for Employees: This feature, on page 50, lists the critical requirements for any employee in the restaurant and foodservice industry.

Discuss

- How can diversity be economically valuable? Encourage students to explore ways in which creating a positive work environment can either save or generate money.
- What are some legal problems that can result from prejudiced or biased behavior in the workplace?
- How do bias and prejudice function as barriers to communication? How can they be overcome?
- Encourage students to describe experiences they've had in which someone has exhibited empathy toward them or toward another, or experiences in which they exhibited empathy themselves.
- Demonstrating empathy implies a nonjudgmental acceptance. What if you cannot accept the other person's behaviors, attitudes, or values in a particular situation? What if you feel compelled to judge that person's actions? Encourage students to discuss how to handle these incidents.

Vocabulary Review

- **Diversity:** Refers to the great variety of people in today's world and their backgrounds, experiences, opinions, religions, ages, talents, and abilities.
- **Stereotypes:** Generalizations individuals make about particular groups that assume that all members of that group are the same.

- **Prejudice:** General attitude toward a person, group, or organization on the basis of judgments that are unrelated to abilities.
- **Bias:** Tendency toward a particular perspective or idea based on prejudice.
- **Cultural tendencies:** Some things that a group of people may tend to do or feel based on their common shared habits and beliefs, such as religion; in contrast, stereotypes do not distinguish between what a group of people may tend to do or believe and what an individual actually does or believes.
- **Empathy:** The act of identifying with the feelings, thoughts, or attitudes of another person.
- **Feedback:** Helpful information that is given to someone to say what is working or needs to be improved about a particular action or performance; feedback is the primary tool that managers use to help employees understand what they are doing correctly and incorrectly in their jobs.

Customized Instruction

Learning disabled	Use the Internet or materials from the counselor's office to create posters for diversity, stereotypes, prejudice, bias, cultural tendencies, and empathy (pages 48–50). Work in groups to create a poster for each term, and present to the class. Encourage discussion to elaborate.
Academically gifted	Research cultural tendencies in the history of the foodservice and restaurant industry. Find examples of how they have shaped menu offerings or changes in the industry. Write an essay and present findings to the class.
ELL	Search the Internet for short videos that help to define diversity, stereotypes, prejudice, bias, cultural tendencies, and empathy. Pair with a partner or in small groups to discuss your findings.

Homework Activity: Physical Skills

Stereotypes

Take a walk around your neighborhood or campus. Just look at what's happening. Are there things you see that reflect how you stereotype people or situations?

In-Class Activity: Literacy

Ethics and Diversity

Working in small groups, discuss the moral values that affect your behavior at school, at home, and in the workplace. Why might people with different backgrounds and characteristics have different values? What values do students share, and why might that be the case? How can understanding values help explain behaviors?

PAGE 51**YOUR ROLE IN THE SUCCESS OF AN ORGANIZATION****Reinforce and Review**

- Most companies create and share their mission—their goals—and share it with both employees and the public.
- Each employee has the ability to contribute to or detract from that mission. The success of a business is directly related to the attitudes and actions of its employees.

Discuss

- How often do you think the public is aware of a company's mission statement? If any of the students are currently employed, how many of them know their company's mission or stated goals?
- What are some of the ways that a dish washer might help a restaurant operation meet its goal of "100 percent satisfied customers"?

Customized Instruction

Learning disabled	Write a mission statement for your goals in this course. Research on the Internet or in the library to find examples of mission statements from businesses—use these to build your own. (This can be adapted to be a pair or small-group activity to group diverse learners together.)
Academically gifted	Research the mission statements of several popular and successful restaurant chains. How do they compare? Research the connection between mission statements and the best places to work in the foodservice and hospitality industry according to articles you found.
ELL	Find videos to show how a restaurant employee, like a host or dish washer, can affect guest satisfaction. Find both positive and negative examples. Discuss with a partner or in a group any experiences you may have had in a restaurant—positive and negative.

PAGES 51–52**RESIGNING FROM A JOB****Reinforce and Review**

- No matter how you feel about a job, once you've decided to leave it, you should follow professional standards for resigning from it.
- Many companies require written notice, even today. Take care to craft a polite note that provides the basic details of your departure. Review Figure 3.8 on page 52 for an example.

Discuss

- Should you text your manager your resignation? Would a phone call be sufficient?
- What is the value of leaving an organization on a positive note, even when the experience of the job wasn't a positive one for you?

Customized Instruction

Learning disabled	Practice writing a resignation letter, based on Figure 3.8 on page 52, addressed to your instructor. Imagine you are resigning from the class.
Academically gifted	Research the history of the resignation letter in America over time. Write an essay about your findings.
ELL	Write and perform a skit to share with the class that demonstrates the right way and the wrong way to resign from a job.

Knowledge Check Answers (Page 52)

1. Managers use feedback to help employees understand what they are doing correctly and incorrectly in their jobs.
2. When resigning from a job, give your employer two weeks' notice, submit a letter of resignation, and leave on a positive note.
3. An employee should have a positive attitude at work and be a team player.
4. Stereotypes are generalizations that individuals make about particular groups. Cultural tendencies are based on a person's beliefs and habits.

PAGE 53

CASE STUDY FOLLOW-UP ANSWERS: "OVERVIEW OF THE RESTAURANT AND FOODSERVICE INDUSTRY"

1. Advantages to teamwork include: Team members can learn from each other; people bring different skills and experiences to problem solving and can come up with solutions that one person would not have thought of; working together can get more done than working alone; and team members can support each other. Disadvantages of teamwork include: Conflict between team members can develop and has to be handled; communication is complicated; some member of a team might let other members do more of the work; and it can take longer to make decisions.
2. The benefits of diversity are a more pleasant work environment, stronger relationships, and more success for the entire team.

PAGE 54

CHAPTER ACTIVITY ANSWERS

- **What Makes a Professional?** Answers will vary but should center of the concepts of the appearance, actions, and attitudes of professional employees. Refer to the Essential Skills feature on page 50 for a complete list of basic expectations.
- **Impact of Teamwork:** Answers will vary, but students should observe some combination of the leveraging of others' strengths during teamwork and the missed opportunities that come from poor communication, competition, or other factors that inhibit teamwork.

- **Counting on Diversity:** Answers will be determined by the makeup of the class, but there should be percentages that show the diversity/variety in the class. If there is no variation in hair color among the students, use a different, nonjudgmental feature that does not single people out, such as hair length.
- **Classroom Code:** Ensure that students' answers are rooted in a fundamental understanding of what a code of conduct should represent: a set of guidelines that represent the principles of the group involved. See pages 46–47 for further support.
- **Having a Mission:** Discuss with the students what attracted them to the mission statements. Based on the statement, what does the student expect from the work environment and performance expectations for the job?
- **Primary Expectation:** Answers will vary. Ensure that the student has selected one of the skills from page 50 and explained why it is so important.

PAGE 55**EXAM PREP ANSWERS**

1. B (p. 51)

5. A (p. 47)

8. B (p. 51)

2. A (p. 48)

6. A (p. 47)

9. B (p. 45)

3. D (p. 48)

7. C (p. 46)

10. D (p. 48)

4. A (p. 49)

Chapter 4

Teacher's Companion

CHAPTER OVERVIEW

This chapter discusses the importance of developing sound communication skills as an element of success in the foodservice industry. The process of communication, barriers to communication, and interpersonal skills are examined.

CHAPTER OBJECTIVES

- 4.1 Describe the communication process.
- 4.2 Identify obstacles to effective communication, and explain how to prevent them.
- 4.3 Demonstrate effective listening skills.
- 4.4 Demonstrate effective speaking skills.
- 4.5 Demonstrate effective writing skills.

ADVANCE PREPARATION

Review	- Chapter 4, pages 56–71 - Unit case study, "Overview of the Restaurant and Foodservice Industry," pages 4–5
Contact	A manager or human resources representative at a local company or even at your school
Prepare	- Develop a list of websites and short videos that address body language, slang, and social media policies in the workplace. - Find articles on the effect of social media behaviors on college admissions, gaining employment, and personal relationships.

CHAPTER BREAKDOWN

PAGE 58

INTRODUCTION

Discuss

- Why is communication so important, both at work and in our personal lives?
- What does it mean to “engage your audience”? What are some techniques students can learn to hold people’s attention?

PAGES 58–59

THE PROCESS OF COMMUNICATION

Customized Instruction

Learning disabled	Watch the video provided with the content for The Communication Process. Work with a partner or group to create your own video based on the content in the section The Communication Process. Students should draw images or pictures of the following situations: • A maître d’ tells a hostess not to seat a recently arrived party. There is very little room in the waiting area, and it is raining outside. • A server asks the chef not to send a table’s food yet because the woman in the party has just gotten up to make a telephone call. The delicate food is beginning to wilt under the heat lamps. • The health inspector tells the manager and chef that the restaurant must be closed for the evening due to a broken waste pipe. The restaurant is booked that evening for a private wedding reception. After drawing out the situations, discuss them as a class. Label the drawings with the elements of the process of communication, as listed in Figure 4.1 on page 58, as a group.
Academically gifted	Research the history of communication in the twentieth and twenty-first century—for about the past 100 years. What major advances in technology have shaped communication? Focus on the elements of the process of communication from Figure 4.1 in particular in your research. Write a report or PowerPoint presentation to share with the class. Research the history of slang words in the foodservice and restaurant industry. Create and present a poster on the various words.
ELL	Describe a time when you have experienced a barrier in communication. Write a description of the event. Take the summary, and draw a diagram of the barrier in communication. Discuss in small groups. Label the pieces of the diagram with the parts of the communication process, as listed in Figure 4.1 on page 58.

Reinforce and Review

- Understanding how the communication process works is important for building strong relationships with employees and customers.
- Both what people say and how they say it help determine whether their message is effective.
- The five components of the communication process are the sender, receiver, message content, message channel, and context. Unfortunately, barriers often prevent the accurate transmission of the message from sender to receiver.
- Before sending a message, the sender should consider the recipient, the message itself, the means of transmitting the message, and any other factors that could affect the transmission. Similarly, when receiving a message, the receiver should communicate understanding of the message, interpret the message, act on the message, and make any necessary decisions that affect how the message is carried out.
- Video: The Communication Process: This animation illustrates the communication process and its five parts: sender, message content, message channel, context, and receiver.

Discuss

- How does our audience affect our communication style?
- What is the difference between expressing ourselves and effectively communicating with other people?
- Which do students perceive as more important: verbal or nonverbal communication?
- Developing a communication plan can help overcome barriers to communication. But is there always a way to develop a plan, or time to complete the process? How can students develop a “meta-plan,” a general way of communicating with others that is flexible enough to adjust to any barriers that arise?
- Two common barriers to communication include lack of time and fear of confrontation. Encourage students to share their experiences with these barriers, as both senders and receivers of messages. What have the results been like?

Vocabulary Review

- **Communication:** The act of expressing information or thoughts to someone else, including both verbal (speaking and writing) and nonverbal communication (body language and gestures).
- **Verbal:** Describes communication through speaking and writing.
- **Nonverbal:** Describes communication through body language and gestures.

In-Class Activity: Math

Real-World Math

Many of the reports that foodservice managers generate have to do with numbers: profit and loss reports, food cost statements, accounts payable, and so on.

As a foodservice manager, you are responsible for calculating the labor cost each week. Unfortunately, the time clock is broken, and while you trust your employees to report the hours they worked accurately, you must calculate their wages and the overall labor cost by hand.

Kitchen Staff: The chef earned \$1,000, the sous chef earned \$700, the line cook earned \$500, the prep cook earned \$350, and the dish washer earned \$600.

Floor Staff: The manager earned \$1,000, the lead server earned \$400, the second server earned \$300, the busser earned \$250, and the bartender earned \$700.

The total restaurant revenue for the week was \$42,000. Workplace benefits, including taxes, come to 33 percent of total wages. You do not have to include tips in your analysis.

Solve for:

- Total kitchen wages plus benefits (\$4,189.50)
- Total floor wages plus benefits (\$3,524.50)
- Total labor cost (all wages plus all benefits) (\$7,714.00)
- Total kitchen labor cost as a percentage of total restaurant revenue (9.98%)
- Total floor labor cost as a percentage of total restaurant revenue (8.39%)
- Total labor cost as a percentage of total restaurant revenue (18.37%)

Based on this information only, how well is the restaurant performing? Write a brief but professional memo to the chef describing the restaurant's performance.

Homework Activity: Science

Is Communication an Art or a Science?

Although many people think of communication as an art, there is science behind the communication process.

Research the communication process and depict it in a flowchart. Include the source (or sender), the code (type of message), the actual primary message, the receiver or decoder as well as channel noise (barriers or interference), and feedback (return message).

PAGES 60–65**INTERPERSONAL COMMUNICATION****Customized Instruction**

Learning disabled	Review the content on effective listening on pages 61–62. Create a skit or video (you can also create a graphic organizer to find images or video clips to define each step) to show how to be an effective listener. Essential Skills: Email Communication: Create a professional email with your name in the address. Draft an email to the teacher, using the essential skill on email communications.
Academically gifted	Search the Internet for sample TED talks. Choose a topic of interest. Write an essay review of the talk, explaining why and how the speaker did or did not exhibit qualities of an effective speaker, as listed in Table 4.1 on page 61. Create a video PSA (or presentation, PowerPoint, or artistic representation) on the steps to effective writing. Use Table 4.2 on page 63 as your guide. Essential Skills: Email Communication: Create a professional email with your name in the address. Draft an email to the teacher, using the essential skill on email communications.
ELL	Use Table 4.1 on page 61 to write a skit or make a video (you can also create a graphic organizer to find images or video clips to define each step) to show the qualities of an effective speaker. Find a short article of interest that pertains to the foodservice and restaurant industry. In small groups, read aloud and discuss. Use Table 4.2 on page 63, Steps to Effective Writing, to identify the steps the author used. Map out steps 1–8. Did the author use all of the steps? Why or why not? Discuss and share your findings with the class. Essential Skills: Email Communication: Create a professional email with your name in the address. Draft an email to the teacher, using the essential skill on email communications.

Reinforce and Review

- Interpersonal communication consists of any two-way communication in which the people involved are trying to relate to one another.
- Make sure your audience recognizes why your message is important for them. If your message is not important to them, then consider either reworking it so that it becomes relevant or not sharing the information with that audience at all.
- Listen to everything a person communicates, not just what he or she says. Pay attention to tone, word choice, and body language to get the message.
- Written messages tend to be more formal than spoken messages and typically include three components: an introduction, a body, and a conclusion.

- **Video: Effective Listening:** This video highlights effective listening steps to improve and increase interpersonal communication.
- **Essential Skills: Email Communications** discusses the proper etiquette for writing and sending email communications.

Discuss

- How can interpersonal communication contribute to a positive and respectful work environment? Similarly, how can it contribute to a negative and hostile work environment?
- How can one be an effective listener in a hectic kitchen environment?
- Why is it important to be brief and clear when delivering a message? How can you weigh brevity against accuracy? When do details matter?
- Why is clarity important in all forms of communication? How and why can words be used to obscure meaning?
- How is effective writing like other communication skills? How is it different? Which do students find the most challenging?

Vocabulary Review

- **Interpersonal communication:** The act of people sharing their feelings, ideas, emotions, and information face-to-face with each other; any two-way communication that has immediate feedback—a conversation.
- **Listening:** The ability to focus closely on what another person is saying to summarize the true meaning of a message.
- **Introduction:** The first part of a written communication that gets the audience's attention, gives the reason for the message, identifies the topics of the message, and establishes the writer's point of view.
- **Body of the message:** This portion of written communication presents the content or topics of the message.
- **Conclusion:** The end part of a written communication, where the writer summarizes key points, calls for action, and identifies the benefits and value of the message.

Knowledge Check Answers (Page 62)

1. Understanding the communication process is important in order to build strong relationships with employees and customers.
2. Qualities of an effective speaker: interact with the audience, use suitable language, use appropriate nonverbal communication, vary your speech patterns, close the conversation.
3. Keys to being an effective listener:
 - Prepare to listen. Stop talking and focus on the other person.
 - Use body language to show that you're paying attention.

- Don't interrupt and don't finish the other person's sentences in your mind or aloud.
- Ask questions to clarify.
- Occasionally rephrase and repeat what you have heard. Check listening skills by saying, "Here's what I think I hear you saying...."
- Listen between the lines. Often, it's not what someone says but how the person says it.
- Don't overreact if you disagree.
- Record key ideas and phrases. While most people probably don't need to take notes when talking to friends, note-taking is a valuable way to improve listening skills in the classroom or workplace.

PAGES 66–68**BARRIERS TO COMMUNICATION****Customized Instruction**

Learning disabled	Create visual definitions to pair with Table 4.3 on pages 66–68, Obstacles to Good Communication. Use the Internet to search for images or short videos that help define the key terms. Or, create your own videos that can help illustrate the examples. Suggested multi-tier grouping for this activity.
Academically gifted	Perform research on modern obstacles to good communication. Use Table 4.3 on pages 66–68 for the key terms to search for. Write a skit, film a video, or create a presentation with all new examples of each communication obstacle listed in the table. Share with the class.
ELL	Create visual definitions to pair with Table 4.3 on pages 66–68, Obstacles to Good Communication. Use the Internet to search for images or short videos that help define the key terms. Or, create your own videos that can help illustrate the examples. Suggested multi-tier grouping for this activity.

Reinforce and Review

- Common barriers to communication include lack of time and fear of confrontation.
- Developing a plan for successful communication despite barriers includes preparation, delivery, and follow-up.

Discuss

- Developing a communication plan can help overcome barriers to communication. But is there always a way to develop a plan, or time to complete the process? How can students develop a "meta-plan," a general way of communicating with others that is flexible enough to adjust to any barriers that arise?
- Two common barriers to communication include lack of time and fear of confrontation. Encourage students to share their experiences with these barriers, as both senders and receivers of messages. What have the results been like?

In-Class Activity: Physical

Communication Barriers

Working in small groups, develop a skit about some barrier to communication and how it could be overcome. The story does not have to take place in the foodservice setting. The skit should be under five minutes.

Present two versions to the class. First, show them an incorrect way to overcome the barrier. Then, show them how to overcome the barrier in a positive way. Afterward, other classmates should be invited to give their feedback. How else could the situation have been addressed?

In-Class Activity: Literacy

Barriers Both Ways

Develop a hypothetical situation in which you, the manager, must convey some information to a staff member. How do you choose to convey the message? What barriers might you perceive in the interaction?

Now, imagine that you are the staff member to whom the message is conveyed. What barriers might you perceive in the interaction? Why and how might these be different from the barriers you perceived as manager?

No one perceives the same situation in exactly the same way. Think about how you can be more aware of the barriers that might affect the people with whom you're communicating each day.

In-Class Activity: Literacy

Clarity and Not So Clarity

Develop three examples of unclear or ambiguous sentences and share them with the class.

For instance, "I can't recommend this dish too highly," could mean either that the speaker thinks the item is unworthy of praise or that the speaker has no words with which to express a sufficiently high opinion of the dish.

Use this exercise to think about the clarity of your day-to-day communication. How can you improve?

Homework Activity: Writing

Barriers to Communication

What barriers to communication have students experienced?

Each student should list the barriers to communication that he or she has directly experienced. Pick one particular instance and diagram the communication process that took place, including why it went wrong. How could the problem have been overcome? What lessons were learned for future interactions with that individual?

Write a one-page report addressing this information.

Knowledge Check Answers (Page 68)

1. The steps to effective writing:
 - Think about the audience.
 - Think about the purpose.
 - Think about the situation and details.
 - Identify the benefits to the message.
 - Identify the topics.
 - Write the main body.
 - Read through the draft.
 - Write the final draft.
2. Barriers to communication can be prevented by observing the audience before sending a message, deciding the best way to get the message out with the highest chance of success, and making sure the message was successfully received.

PAGE 69

CASE STUDY FOLLOW-UP ANSWERS: “OVERVIEW OF THE RESTAURANT AND FOODSERVICE INDUSTRY”

1. Because Michele is handling staff members with a wide range of cultural backgrounds and levels of experience, she needs to be sensitive to the context of communication.

Barriers to effective communication include language differences, semantics, use of jargon, improper tone of message, lack of clarity, assumptions, cultural differences, prejudices and biases, noise, nonverbal communication, gestures, and other distractions such as lack of time and other pressing issues.

Each member may interpret messages differently, so Michele should work hard to develop clear messages, delivered in a concise way, while taking care to show empathy for each individual.

2. Michele should assist in opening lines of communication by leading a dialogue between the two staff members. Each should be coached to use both effective speaking and listening skills, listed below.

An effective speaker interacts with the audience, uses suitable language, uses appropriate nonverbal communication, varies speech patterns, and closes the conversation.

Effective listening includes preparing to listen, showing attention, not interrupting the speaker, asking questions to clarify the message, rephrasing and repeating what was heard, listening between the lines, not overreacting, and recording key ideas and phrases.

PAGE 70

CHAPTER ACTIVITY ANSWERS

- **The 5 Ws and How:** Student answers will vary but should include the who, why, what, when, where, and how. Students may choose from a wide range of policy changes so long as their message is clear and professional and includes all the information needed to explain the new policy. Reference pages 62–63 for Steps to Effective Writing, along with the Essential Skills feature on page 65 for Email Communication. Stress the integration of effective writing in email communication.
- **Let's Talk...and Listen:** Answers will vary. Use pages 58–59 for reference. The activity should point out how important clear communication is, emphasizing that the choice of medium is important, along with body language (lacking when a person's back is turned) and acknowledgment on the part of the receiver of a clear understanding of the message.
- **Messages, Messages, and Messages:** Student answers will vary. Reference cell phone bills for number information, if available, or have students track messages daily for several days to take an average. Use the section on Barriers to Communication on pages 66–68 to start the discussion on good and bad forms of communication.
- **Miscommunication:** Students have a variety of options, so long as they understand that miscommunication caused the initial problems and that effective communication could have changed the outcome. Use Table 4.3 on pages 66–68 to direct the role-plays. Use the obstacles in a variety of ways to show the nuance of miscommunication.
- **Social Media Dos and Don'ts:** Student answers will vary. Reference the Essential Skills feature on page 65 for Email Communication to drive discussion; policies on social media from various companies can be prepared ahead of time. Does your district have a policy for students and employees?
- **Problem Resolution:** Students should consider how personal problems have resulted from poor communication and how understanding what went wrong may help in the future. Have students review the Process of Communication section on pages 58–59, paying attention to the parts of the process to understand the breakdown. If students will create a written response to the activity, reference Table 4.2, Steps to Effective Writing, on page 63.

PAGE 71

EXAM PREP ANSWERS

1. C (p. 58)

5. B (p. 66)

8. A (p. 63)

2. B (p. 62)

6. A (p. 61)

9. B (p. 66)

3. C (p. 61)

7. A (p. 62)

10. C (p. 65)

4. D (p. 58)

Chapter 5

Teacher's Companion

CHAPTER OVERVIEW

This chapter introduces the student to ways that he or she can establish a successful career in the restaurant and foodservice industry. The chapter explains how to complete various types of application including employment and academic versions and how to prepare for and conduct a job interview.

CHAPTER OBJECTIVES

- 5.1 Outline a plan for an effective job search.
- 5.2 Read and complete a job application form.
- 5.3 List the steps to an effective job interview.
- 5.4 Identify the differences between closed and open-ended questions in interviews.
- 5.5 Explain the follow-up steps for a job interview.
- 5.6 Define and give examples of an employee assessment test.
- 5.7 Outline the steps to choosing a college or trade school, and identify resources for answering those questions.
- 5.8 List ways to find and apply for scholarships.

ADVANCE PREPARATION

Review	- Chapter 5, pages 72–95 - Unit case study, “Understanding the Restaurant and Foodservice Industry,” pages 4–5 - Relevant material from Chapter 1 and 2
Contact	School guidance or career counselor
Prepare	Sample publications from industry sources, such as magazines and weekly papers

CHAPTER BREAKDOWN

PAGE 74

INTRODUCTION

Customized Instruction

Learning disabled	What are some ways to find a job? Write down what you know now about finding a job, and make a list of the places you would begin your search. Write down a summary of a job you may have had—doing chores, babysitting, yardwork, or any other applicable job-type duties. Have you been in clubs? On the honor roll? Girl Scouts or Boy Scouts? Write a list of all of the tasks or activities you may have performed in the past. This can help build a list of skills for a resume—perfect for finding your first job. Students should identify and write down the following: • Three ways in which they are valuable to potential employers • Three ways in which they are valuable to their families • Three ways in which they are valuable to their friends • Three ways in which they are valuable to their school Now think about how these overlap. Are students valuable to their friends in the same ways that they are valuable to their families? Now students should identify and write down three ways in which they could become more valuable to either of these groups and consider how to act on this knowledge in both the short term and the long term. For instance, if someone wants to be more valuable as a helper at home, then a short-term goal might be to wash the dishes and clean the kitchen after dinner each night, and a long-term goal might be to take a course in babysitting to care more effectively for younger siblings. Each student should keep this paper. In what ways can referring to it occasionally be empowering?
Academically gifted	Research temp agencies in your area. What are their policies? Why work with a temp agency? Write a persuasive essay detailing your position on temp agencies. Apply for a job online. Take detailed notes, taking screen shots, if necessary, for every step of the process. Create a presentation or video to share with the class about your experience. Make sure to take note of any information or documents that were required for the process.

(continued)

ELL	Use the Internet to search for jobs in your area. Make a graphic organizer of the list of jobs that interest you. Circle some skills that you may have—write a note describing how or why those skills apply. Students should identify and write down the following: • Three ways in which they are valuable to potential employers • Three ways in which they are valuable to their families • Three ways in which they are valuable to their friends • Three ways in which they are valuable to their school Now think about how these overlap. Are students valuable to their friends in the same ways that they are valuable to their families? Now students should identify and write down three ways in which they could become more valuable to either of these groups and consider how to act on this knowledge in both the short term and the long term. For instance, if someone wants to be more valuable as a helper at home, then a short-term goal might be to wash the dishes and clean the kitchen after dinner each night, and a long-term goal might be to take a course in babysitting to care more effectively for younger siblings. Each student should keep this paper. In what ways can referring to it occasionally be empowering?
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Discuss

- Working helps young employees develop essential skills like responsibility, self-confidence, decision making, problem solving, and initiative.
- The most important step toward a successful career is taking classes to help build these and other essential skills.

PAGES 74–78

THE JOB SEARCH

Customized Instruction

Learning disabled	Create a comic book using illustrations to describe the steps for searching for a job in Table 5.1 on page 75. Use the content under the heading “Job Applications” to create a graphic organizer with photos or images to list all tips for completing a job application.
Academically gifted	Create a résumé, cover letter, and portfolio of your own design. Use the ProStart website as a starting point for research.
ELL	Create a word wall to define the terms commonly found on job applications in Table 5.2 on page 77.

Reinforce and Review

- People find jobs in many different ways. Word of mouth, advertisements, networking, job fairs, and local agencies are just a few options.
- Newspapers typically list employment ads alphabetically by title or category. Online sources typically require the searcher to enter a keyword, and then all ads containing that word will be displayed.
- Employers often specify the methods candidates should use to apply for a job. These should be followed explicitly, as following directions is a desirable character trait.
- Creating the right tools for conducting a job search can help a potential employee feel more confident.
- Successfully completing a job application indicates to the employer that the applicant can follow directions and communicate clearly.

Discuss

- Encourage students to share their experiences with job searches. Where have they looked for jobs? What documents have they prepared? What factors may have made their searches successful or unsuccessful?
- Many online employment sites allow aspiring employees to post their résumés for free, although they may be required to establish a user account. Why do students think this is the case?
- How have online employment sites changed the way people search and apply for jobs?
- What are some good ways to research prospective employers?
- What information and other materials should an applicant gather before completing an application form?

Vocabulary Review

- **Job application:** A document a prospective employee fills out that provides a first impression of what the applicant has to offer and includes general information about the applicant and his/her employment history.
- **Résumé:** A written summary of an applicant's experience, skills, and achievements that relate to the job being sought; a résumé tells an employer why the applicant is the best person to hire for the job.
- **Cover letter:** A brief letter in which applicants introduce themselves to an employer.
- **Portfolio:** A collection of samples that showcases interests, talents, contributions, and studies; a portfolio is a good self-marketing tool that displays an applicant's finest efforts and can also show relevant courses, transcripts, certifications, and licenses the applicant might hold.

Knowledge Check Answers (Page 78)

1. The 10 steps for searching for a job:
 - Decide what characteristics a job should have.
 - Figure out what areas are open to compromise.
 - Gather and organize the information needed for applying.
 - Create the documents needed for applying.
 - Identify the search methods.
 - Choose the businesses to contact.
 - Research each business chosen.
 - Contact the businesses chosen in whatever method they have indicated.
 - Decide on a time for the interview.
 - Call the business about one week after the interview.
2. To complete a job application, you need to know your work experience and references.

In-Class Activity: Math

By the Numbers

If the restaurant and foodservice industry is projected to add 1.8 million jobs during the current decade, reaching 14.8 million total jobs in 2019, how many jobs did the industry have in 2009? (13 million) What percentage increase is this? (13.8%) What is the average increase in jobs per year? (180,000)

Homework Activity: Math

The Bare Minimum

Most entry-level foodservice employees are paid at or near the minimum wage, or the lowest amount of money most employees may legally be paid. Although federal law sets a national minimum wage, several states and even cities have established minimum wages that are higher than the federal law. On the other hand, some states allow employers to pay employees who receive tips at a rate below the minimum wage. What are the minimum wages for tipped and untipped employees in your area?

Calculate the gross annual pay, before tips, for a full-time tipped worker earning minimum wage, assuming a 40-hour workweek. Now assume that tips would constitute an additional 20 percent. Now what is the gross annual pay? What if tips were 40 percent? What if they were 100 percent?

Now calculate the gross annual pay for a full-time, untipped employee earning minimum wage, assuming a 40-hour workweek.

If minimum wages for tipped and untipped workers are the same in your area, how does that affect the restaurant's finances? On the other hand, if minimum wages for tipped and untipped workers vary, how does that affect the restaurant's employees?

Homework Activity: Looking for Jobs

Look for local jobs available in a career path that interests you. What skills and background do employers require or desire? What do the job descriptions include? What other information do employers provide about jobs in this field?

Are you still attracted to these jobs, having read these advertisements? Why or why not? Write a one-page paper describing your findings.

PAGES 78–89
THE JOB INTERVIEW

Customized Instruction

Learning disabled	Create a vision board or graphic organizer for the key points to help applicants make a great first impression, found on page 79. Find examples, perhaps clips found on the Internet, of what you think are good interviews and what you think are poor interviews. Write a summary of your conclusions. Uses the steps outlined on pages 80–81 on the interview as a guideline. List examples of closed questions and open-ended questions.
Academically gifted	Work with your instructor to organize a mock interview fair for you and your classmates. Prepare a list of teachers and community members, business owners and operators, and volunteers willing to participate. Schedule the event and plan for the students to engage in a speed interview event—where they will practice interviewing with several volunteers. Ideally, the mock interview will last no more than five minutes, and then the student will switch to another table. Prepare a full outline of the plan and present to your instructor. Write a personal essay using the typical interview questions and responses in Table 5.3 on pages 82–83 to guide the body of the essay. Interview your counselor about employee assessment tests. What tests apply to high school-aged students? Is there a possibility that you and your class could take one to practice?
ELL	Pair with a partner or work with a small group. Practice asking the typical interview questions with a classmate. Record the answers as the interviewer. Switch, and answer all of the questions asked by a classmate. Use Table 5.3, Typical Interview Questions and Responses, on pages 82–83. Write out all of the questions and answer with your own responses (your answers). Practice writing a follow-up thank-you note to be sent after the interview, using Figure 5.4 on page 85 as an example. Think of three different jobs and address the notes to three different interviewers.

Reinforce and Review

- During a job interview, potential employees work to communicate their talents and strengths to an employer in hopes of getting a job.
- Job applicants need to demonstrate to employers that they are the most qualified candidate for the job available.
- An applicant's physical appearance can play an important role in hiring decisions. If the person is dressed professionally, he or she is likely to work professionally.
- Interviewees should take the opportunity to ask questions during the interview, which allows them to display self-confidence while obtaining additional pertinent information that could affect the decision of whether to accept an offered job.
- Video: Preparing for the Job Interview: This video details the important preparation required before the interview.
- Video: The Interview: This video walks the student through the key steps in the interview process, highlighting best practices.

Discuss

- Some interviewers like to think up unusual questions to gauge interviewees' ability to think quickly and adjust to unfamiliar situations. Why might those be important skills in the restaurant and foodservice industry? How can interviewees prepare for this type of question?
- Candidates should pay great attention to even small details when preparing for interviews. What does this demonstrate about their work to a prospective employer?
- How can interviews be learning experiences? How can applicants learn both about the company and themselves?
- What is the overall impression an interviewee should give an interviewer? How can interviewees establish and reinforce a key message about themselves and their abilities?

Vocabulary Review

- **Interview:** Meeting between an applicant and employer to discuss the applicant's qualifications for the job; the interview is the applicant's opportunity to "show his or her stuff" in person to a potential employer.
- **Punctuality:** The state of being on time for an appointment, such as a job interview.
- **Appearance:** How someone looks, such as a person's clothing and hygiene; for an interview, it is important for an applicant to dress appropriately and demonstrate good personal hygiene.
- **Good personal hygiene:** Describes a person who looks neat and clean, which gives the impression that his or her work will also be neat and clean.
- **Positive attitude:** Showing enthusiasm by smiling and staying calm under pressure; applicants who smile and are enthusiastic suggest that they will do their work with that same attitude.

- **Good manners:** Being considerate and thoughtful by observing the pleasant customs of society, such as saying “please,” “thank you,” and “excuse me” in the proper circumstances; displaying good manners is the basis for business etiquette and implies that you will also act that way around coworkers and customers.
- **Etiquette:** The proper way a polite person should behave.
- **Closed questions:** Questions that can be answered with a simple yes or no or with a brief, factual statement.
- **Open-ended questions:** Questions that encourage people to talk, making them feel more comfortable and encouraging them to share important information and valuable insight about themselves; open-ended questions are usually thought-provoking, requiring people to develop in-depth responses and become actively involved in the process.
- **Assessment tests:** Tests that evaluate a person’s ability in a given area; employment assessment tests are usually executed online and test an applicant on things that are important to the organization, including one or more of four subject areas: IQ tests, aptitude tests, psychological tests, and skills tests. The requirement for most assessment tests (by law) is that each question is related to a requirement of the position a person is applying for.

Knowledge Check Answers (Page 88)

1. The 10 steps for searching for a job:
 - Decide what characteristics a job should have.
 - Figure out what areas are open to compromise.
 - Gather and organize the information needed for applying.
 - Create the documents needed for applying.
 - Identify the search methods.
 - Choose the businesses to contact.
 - Research each business chosen.
 - Contact the businesses chosen in whatever method they have indicated.
 - Decide on a time for the interview.
 - Call the business about one week after the interview.
2. To complete a job application, you need to know your work experience and references.
3. Student answers will vary but should include some items found in Table 5.5 on page 87.
4. Closed questions can be answered with a simple yes or no or with a brief, factual statement.
 Open-ended questions encourage job applicants to talk about themselves, making them feel more comfortable and giving the interviewer important information and valuable insight about the applicant.
5. It is important to follow up after an interview to show the employer that you want the job.
6. Employers use assessment tests to get an understanding of you as an individual, as well as your decision-making process.

Homework Activity: Science

Shape-Shifting

In 1943, psychologist Abraham Maslow proposed a “Hierarchy of Human Needs” based on his research of the human personality. He described a pyramid in which the broad base represents basic human needs like food, air, and water. The pyramid then moved upward through safety needs, loving and belonging needs, esteem needs, and self-actualization needs. Maslow posited that humans need to fulfill their physiological needs before they can begin to address the needs further up the pyramid. Once each step has been reached, individuals can begin striving toward the next. At the top, they are fully developed humans.

Research Maslow’s hierarchy of needs to understand how it operates and what it addresses. Do you think he included the correct elements at each stage of the pyramid? Does the process he describes make sense? What does self-actualization mean in this context? What are some positive and negative attributes of Maslow’s schema?

Develop your own explanation for how the human personality develops and evolves, including a visual depiction of your hypothesis. What shape is your diagram? Write a one-page paper on your research and your explanation for the development of personality.

In-Class Activity: Interview-ese

A number of sample interview questions are provided on pages 82–83. Think about what the interviewer is trying to learn through each. How would you respond to each question? Write down your answers.

As a class, discuss some ways each question could be addressed, in addition to the suggestion given in the text.

PAGES 90–91

CHOOSING A COLLEGE OR TRADE SCHOOL

Customized Instruction

Learning disabled

Use the Internet to find colleges or trade schools that interest you and that align with your career goals. Using Table 5.6, Questions to Ask When Choosing a College or Trade School, write out (or type) the topics and questions from the table, and answer each question as you search websites. Complete two to three tables with answers that include information from several colleges or trade schools.

Use the website <https://fafsa.ed.gov/> to find videos that describe FAFSA. Make your own video to explain what FAFSA is and how it applies to you.

(continued)

Academically gifted	Create an extensive list of scholarships that apply to a discipline that relates to the culinary arts—or any other discipline that peaks your interest. Make sure to include all the relevant information to address the bullets under Scholarships and Financial Aid on page 90. If applicable, apply for scholarships, college, or trade school, and complete your FAFSA. During this time, keep a video diary to show how you completed each step, along with your own personal take on what it was like to go through the process. Share with the class.
ELL	Create videos to show the steps to find scholarships, as listed in the bullets on page 90. Show how to perform each step described. Use the website for the Free Application for Federal Student Aid (FAFSA), found at https://fafsa.ed.gov/, to define the key terms of financial aid, work study, and FAFSA. If you are a senior, work with your instructor to find the tools to complete the application.

Reinforce and Review

- Visiting a college or trade school that appeals to you, if possible, is an excellent way to see firsthand how the institution might help you achieve your goals.
- All students who meet the base criteria for a scholarship should apply for it. Each year millions of dollars in scholarship monies are not awarded.
- Scholarship-granting organizations have very specific guidelines and deadlines, so organization is critical.
- Apply for as much financial aid, especially in the form of grants, work study, or scholarships, as necessary. Federal or private loans are also available, but these must be paid back with interest.
- Essential Skills: Completing an I-9 Form explains how to correctly complete an I-9 form.

Discuss

- How is each of the questions listed in Table 5.6 on page 91 relevant to determining which college or trade school to attend? How do you know if a school is right for you? What resources are available to help you answer these questions? Where can they be obtained?
- Is accepting a student loan a burden or an investment opportunity? Why might someone choose to decline an offer of financial aid?
- What are some ways in which college and trade school applicants can impress an admissions department?

Vocabulary

- **Scholarship:** A grant or financial aid award to a student for the purpose of attending an institution.
- **Financial aid:** Monetary assistance offered to students who apply, including grants, educational loans, and work study (working as a student for the school).
- **Work study:** Working as a student for the school in exchange for financial aid.
- **Free Application for Federal Student Aid (FAFSA):** The application students and parents must fill out in order to qualify for financial aid at any school that receives federal funds (almost all of them); this application is used by the federal government to determine the total amount of financial aid for which an applicant qualifies.

Knowledge Check Answers (Page 91)

1. Student answers will vary. Students may pick questions listed in Table 5.6 on page 91.
2. To find out about scholarships, contact the financial aid office of the school, search the Internet, and talk with a guidance counselor.
3. To qualify for financial aid at any school that receives federal funds, the student and the student's parents will need to complete the Free Application for Federal Student Aid (FAFSA).

Homework Activity: Physical

Visit a Trade School or College

Visit a college or trade school that appeals to you. It is an excellent way to see firsthand how the institution might help you achieve your goals. Write a one-page essay on your experience.

Homework Activity: Literacy

Showcasing Skills

Many employers, especially in the restaurant and foodservice industry, will ask job applicants to spend a day working in their facilities. This allows an employer to observe the applicant's skill level as well as his or her interpersonal skills, which can help the employer decide whether the applicant would be a good member of the team.

Select an employer for whom you would like to work. Prepare a formal request to spend some time working in his or her establishment so that you can learn more about the workplace and so the employer, in turn, can learn more about you and your skills. This request can be part of your cover letter and should accompany your résumé. Be clear as to why you would like to work for this particular business.

Bring the letter to class and exchange it with another student for proofreading. You do not actually have to send the letter to the employer if you do not want to, but your letter should be professional enough that you could send it with high hopes of a response.

Homework Activity: Literacy

Scholarship Options

Do you plan to attend a postsecondary school? What colleges, universities, or trade schools interest you, and why? What do you plan to study?

Identify a scholarship, either one tied to a specific school or one that can be used anywhere, for which you are qualified. Obtain and complete the application form as practice either for actual college applications or for employment applications.

PAGE 92

CASE STUDY FOLLOW-UP ANSWERS: “OVERVIEW OF THE RESTAURANT AND FOODSERVICE INDUSTRY”

1. After the interview, Ashley should send a thank-you note so that that she stands out from the crowd of job seekers and make a follow-up phone call one week later.
2. Student answers will vary. Students can refer to Table 5.3 on pages 82–83 for some typical interview questions that Michele might ask prospective employees.

PAGE 93

CHAPTER ACTIVITY ANSWERS

- **The Thank-You:** Answers will vary, but the thank-you note should be short, confirm a desire for the job, reinforce qualifications, and give a time for follow-up with a phone call. Students can use the thank-you email on page 85 as an example.
- **Nerves and the Body:** Student answers will vary, but encourage students to think about the different ways that “nerves” can manifest themselves—physical symptoms as well as emotional ones. They should also have some ideas of how to deal with those nerves (aside from the Superman pose).
- **Pay Ranges:** Student answers will vary. Encourage students to think of a variety of positions so that the class can compare trajectories. Students can also use online research to find pay ranges for positions in their area.
- **Interview Practice:** Student presentations should be brief and clear, giving relevant information about the speaker and how he or she can contribute to the imaginary company as well as benefit as an employee.
- **The Career Plan:** Student answers will vary. This is a chance for students to research the next step in their education and think about their professional future while planning a career path. Again, encourage students to think outside of the box when researching career opportunities.
- **Presentations:** Answers will vary. Students should take notes during three presentations from the “Interview Practice” activity, keeping in mind the three points bulleted here. Ask students to be specific about their critiques of the presentations. Students should be able to defend why one of the three presenters would likely be the best to hire.

PAGES 94–95**EXAM PREP ANSWERS**

1. A (p. 78)

2. B (p. 78)

3. A (p. 82)

4. D (p. 82)

5. C (p. 81)

6. A (p. 80)

7. A (p. 88)

8. A (p. 88)

9. B (p. 91)

10. C (p. 90)

Chapter 6

Teacher's Companion

CHAPTER OVERVIEW

Chapter 6 provides an overview of foodborne illnesses as well as both chemical and physical contamination. Keeping food safe, food defense, allergens and reactions, and government regulatory agencies involved in the restaurant and foodservice industry are also covered.

CHAPTER OBJECTIVES

- 6.1 Define what a foodborne-illness outbreak is, and list the costs associated with one.
- 6.2 Recognize risks associated with high-risk populations.
- 6.3 Identify factors that affect the growth of pathogens (FAT TOM).
- 6.4 Identify characteristics of TCS food and list examples.
- 6.5 Identify ways food becomes unsafe.
- 6.6 Identify the most common allergens and methods for preventing allergic reactions.
- 6.7 Recognize the need for food defense systems.
- 6.8 Identify government agencies that regulate the restaurant and foodservice industry.

ADVANCE PREPARATION

Review	- Chapter 6, pages 100–119 - Unit case study, “A Safe Operation,” pages 98–99
Contact	- Biology department for use of: microscope, graticule slides, slide covers, pipettes or droppers, glass stirring rods - Contact the local health department and inquire if the inspector is available to perform a pre-inspection. Have students walk through the mock inspection as the Person in Charge and write any corrective actions necessary from the mock report.
Prepare	- Paper strips for display - Mild culinary acids and bases for tasting - Baker’s yeast, mason jars with lids, sugar, measuring spoons, grease pencil - Articles about foodborne-illness outbreaks

CHAPTER BREAKDOWN

PAGE 102

INTRODUCTION

Discuss

- Food safety involves many factors, including kitchen design, food purchasing, personal hygiene, cleaning and sanitizing, food preparation, cooking, and table service.
- Food safety problems can lead to illness or even the death of a guest.
- All staff must be trained in proper food-handling techniques.

PAGES 102–103

FOODBORNE ILLNESS AND ITS COSTS

Customized Instruction

Learning disabled	Search and find images or videos that assist in defining foodborne illness, foodborne-illness outbreaks, high-risk populations, and immune systems.
Academically gifted	Research cases of foodborne-illness outbreaks that are similar to those listed as bullet points near the top of page 103. Create a visual presentation that shows the outbreak from start to finish, and present to the class.
ELL	Search for images or video clips to define the many ways in which foodborne illness can impact an operation.

Reinforce and Review

- Food safety is a public health concern for everyone in the foodservice industry.
- Each person in the foodservice industry plays a role in food safety.
- Operations that serve high-risk populations must keep these customers' status in mind when serving food. They also must sometimes follow special rules as determined by law.

Discuss

- What is the value of a restaurant's reputation?
- How is a reputation developed?
- How might a restaurant's reputation be harmed?
- How could a restaurant's reputation, once harmed, be repaired?

Vocabulary Review

- **Foodborne illness:** A disease transmitted to people by food.
- **Foodborne-illness outbreak:** When two or more people get the same illness after eating the same food, an investigation is conducted by state and local regulatory authorities, and the outbreak is confirmed by laboratory analysis.

- **High-risk populations:** Certain groups of people that have a higher risk of getting a foodborne illness than others, such as elderly people, preschool-age children, and people with compromised immune systems.
- **Immune system:** The body's defense against illness.

Homework Activity: Writing

Public Service Announcement

Write and film a public service announcement for foodborne illness, addressing an at-risk population. Partner with a local agency for the elderly, like Meals on Wheels, or for children, like Head Start, and show or perform your PSA. Alternate: Create a book with images to illustrate the concepts, and present to either children or the elderly in your local area.

In-Class Activity: Physical

The Human Flow Chart

Have students assemble themselves into a line of steps that represent the life of a food item, beginning with the production of the raw ingredients and ending with the item being eaten by the customer.

These steps will consider food-production problems that include biological, chemical, and physical contamination.

Each student will represent a step. Each student will describe the step. Each student will point out what food safety problems could arise at that step. Each student will mention how a problem at his or her step could impact public health. Each student will form and verbalize an opinion about how a problem at this step would impact the profitability of the food item. Each student will indicate what measures taken at this step will ensure the safety of the food. As the students verbally identify the various potential sources of trouble, they will also be able to verbalize the connectivity between various trades, sources, and vendors.

In-Class Activity: Math

Graphic Organizer

The students can make a graphic organizer of the statistics from the Centers for Disease Control and Prevention related to foodborne illness.

One idea is to use a pyramid shape, with the large number at the bottom. This shape could be inverted to a funnel, with the largest number on top. The students may have other ideas as well.

Homework Activity: Math

The Cost of Foodborne Illnesses

Research a recent foodborne-illness outbreak. Construct a hypothetical scenario to illustrate the case. Create the specifics necessary to calculate the cost of the case. Use the USDA Economic Research Services foodborne-illness cost calculator to complete this task.

In-Class Activity: Science

The Growth of Microbes

Materials for Each Group

Microbes	8 oz warm (100°F or 38°C) water
4 glass graticule slides	8 oz cold (40°F or 4°C) water
4 slide covers	2 disposable pipettes
1 envelope of active dry baker's yeast	2 glass stirring rods
2 8-oz mason jars with lids	Pencil
3 tbsp sugar in a container	Paper
Measuring spoons	Grease pencil

Procedure

1. Divide the students into pairs or small groups. Have the students read the experiment procedure aloud together. As a group, have them write down and date a hypothesis of the outcome.
2. Fill a mason jar with 8 ounces of warm water. Add ½ tablespoon of sugar to the water. Stir. Add 1 teaspoon of yeast to the sugar/water solution. Stir. Repeat the same procedure with 8 ounces of cold water. Place two drops of the warm-water solution onto the center of a glass slide, and place a coverslip over the sample.
3. Repeat the same process, making a slide of the cold-water solution.
4. Under the microscope at lowest power, focus on the warm-water slide. Increase the power until the yeast cells are easily countable. Have the students draw evenly-spaced grids on paper. Have the students count the number of cells in three grid squares. Students should make a mark with a pencil dot in the grid square to represent each cell counted.
5. Repeat for the cold-water slide. Make sure the students label the data accordingly.
6. Screw the lids on the jars. Label the jars with the group names, date, time, and whether it's a cold-water or warm-water yeast solution.
7. Refrigerate the cold-water solution.
8. Place the warm-water solution in the warmest overnight place available in the classroom. The next day, have the students make new slides with their cold-water and warm-water solutions. Have them repeat the process of viewing and counting the yeast cells in the samples.
9. Compare the data from both viewings of both samples.

Data Analysis

Have the students determine the percentage of colony growth or decline between the two samples of "before" and "after." For example, with the cold-water solution, if the students counted 25 cells in the grid in the first sample and 30 cells in the second sample, the increase would be 5 cells, or 20 percent. The colony grew by 20 percent in a 24-hour period. Students should compare the before and after of each temperature solution. Students should also compare the colony growth between the two temperature solutions.

Conclusions

Have the students compare their results to their hypothesis. Have the students draw conclusions about the growth of microorganisms under the various temperature conditions.

Customized Instruction

Learning disabled	Create a visual graphic organizer for this section, paying special attention to defining the key terms with images or video clips. Create a children's book to explain how food can become contaminated. Use the four types of pathogens that can contaminate food, causing foodborne illness.
Academically gifted	Using the content from pages 104–110, write a script for a horror movie-themed video or sketch that would describe all forms of contamination that lead to foodborne illness. In the scenario, all key terms must be used and described. Work with other students in the class to make the script come to life. Direct the performance, either live or on video. Use the CDC website to write a report on some of the foodborne-illness cases. Write a summary of the more interesting cases. Create a visual presentation that summarizes the information.
ELL	Search the Internet or find images that define the key terms in this section: • Hazard • Contamination • Pathogen • Microorganism • Viruses • Bacteria • FAT TOM • TCS Food • Temperature Danger Zone • Ready-to-eat Food • Parasites • Mold • Yeast Create large posters of the key terms listed above, personifying each term as a "most wanted" criminal. Make sure to describe the crime in terms of what each term can cause.

Reinforce and Review

- It is important to consider every aspect of potential contamination.
- All foods must be kept out of the temperature danger zone of 41°F to 135°F (5°C to 57°C).
- Foods that are to be served at room temperature must be evaluated for potential vulnerability to pathogens. They must be held at safe temperatures.
- It is not always possible to see a parasite in food. Unlike yeast, bacteria, or mold, a parasite does not alter the color, texture, or smell of the food product. In fact, there may be only one two-celled parasite specimen in an entire batch of food. No one will be affected except the one person who ingests the live parasite.
- Usually, parasites are present in foods where the hygiene of the water, kitchen, or foodservice personnel is poor.
- Video: TDZ and TCS Food: This animation defines items that must be time and temperature controlled for safety (TCS food, for short), and the temperature danger zone (TDZ for short). The connection between the two is also made.

Discuss

- Have the students think of examples of foodborne pathogen organisms that can alter the appearance or odor of a food. Help the students to understand and realize that some foodborne pathogens cannot be detected by human senses.
- How can you tell if a variety of yeast is useful or bad? How can you tell if a mold is harmful or beneficial to the food? How can you tell if food has spoiled?
- How can you prevent physical contaminants from entering food for service?
- Ask the students, “Have you ever heard of deliberate contamination of food at a foodservice operation?” Perhaps the students have heard or read about such things. They may be aware of other sorts of deliberate poisoning, such as anthrax-laden white powder on mailed letters or packages.
- Discuss the various ways that they can defend the food supply of their establishment.

Vocabulary

- **Hazard:** Something with the potential to cause harm.
- **Contamination:** Means that harmful things are present in food, making it unsafe to eat.
- **Pathogens:** Microorganisms that cause illness.
- **Microorganisms:** Small, living organisms that can be seen only through a microscope; most living things, including humans, carry microorganisms on, or in, their bodies.
- **Viruses:** The leading cause of foodborne illness, viruses can survive refrigerator and freezer temperatures and grow inside a person’s intestines after they are eaten. People can get viruses from food, water, any contaminated surface, or from other people. Examples of viruses that can cause foodborne illness include Hepatitis A and Norovirus.

- **Bacteria:** A common type of microorganism; several species of bacteria are pathogens that can cause infectious diseases. Examples of foodborne bacteria include *Salmonella* Typhi, nontyphoidal *Salmonella*, *Shigella* spp., and Shiga toxin-producing *E. coli* (STEC).
- **FAT TOM:** An easy way to remember the six conditions that bacteria need to grow: food, acidity, temperature, time, oxygen, and moisture.
- **TCS food:** Food that needs time and temperature control for safety because it is most vulnerable to pathogen growth; these types of food have the FAT TOM conditions needed for bacterial growth and are also commonly involved in foodborne-illness outbreaks.
- **Temperature danger zone (TDZ):** The temperature range between 41°F and 135°F (5°C and 57°C), in which bacteria grow well; you can control the growth of most bacteria by keeping food out of the temperature danger zone.
- **Ready-to-eat food:** Food that can be eaten without further preparation, washing, or cooking; some examples include washed fruit and vegetables (both whole and cut), deli meat, bakery items, sugar, spices, seasonings, and cooked food.
- **Parasites:** Organisms that get nourishment and protection from another living organism known as a host, such as a person, animal, or plant. Parasites can live in many types of food that humans like to eat and also can contaminate water. In the United States, the most common foodborne parasites are protozoa, roundworms, and tapeworms.
- **Fungi:** Organisms found in air, soil, plants, water, and some food that can cause illness but most commonly are responsible for spoiling food; mold and yeast are two examples of fungi.
- **Mold:** Tiny plants that grow under almost any condition but grow especially well in acidic food with little moisture, such as jams, jellies, and cured, salty meats such as bacon. Mold that is visible to the human eye is actually a tangled mass of thousands of tiny mold plants. Molds often spoil food and sometimes produce toxins that can make people sick. Sometimes mold is intentionally used to affect the flavor or characteristics of a product, such as with Brie, camembert, and gorgonzola cheeses.
- **Yeast:** Microorganism that can spoil food quickly, as indicated by the smell or taste of alcohol, white or pink discoloration, slime, and bubbles; like molds, yeasts grow well in acidic food with little moisture, such as jellies, jams, syrup, honey, and fruit or fruit juice.

Knowledge Check Answers (Page 110)

1. A foodborne-illness outbreak occurs when two or more people get the same illness after eating the same food, an investigation is conducted by state and local regulatory authorities, and the outbreak is confirmed by laboratory analysis.
2. High-risk populations include the elderly, preschool-age children, and people with compromised immune systems.
3. The six conditions needed for bacteria to grow are: food, acidity, temperature, time, oxygen, and moisture (FAT TOM).
4. The temperature danger zone (TDZ) is the temperature range between 41°F and 135°F (5°C and 57°C). Bacteria grow well in this temperature range.

In-Class Activity: Literacy

Unsafe Practices Awareness Team

1. Assign the students to five teams.
2. Each team creates and prepares a statement of awareness about a particular food-safety program.
3. The teams each write their statement on a strip of paper for display.

The problems are the five points outlined in the text:

- Poor personal hygiene
 - Time-temperature abuse
 - Cross-contamination
 - Poor cleaning and sanitizing
 - Purchasing from unapproved suppliers
4. The statement can be written in the form of information, a pledge, a mnemonic or rhyme, an acronym, or any other expression they choose. As each team presents its statement, it adds its paper strip to a poster or bulletin board display for the classroom.

PAGES 111–113

FOOD ALLERGIES

Customized Instruction

Learning disabled	Search for images or video clips to define the key terms for this section: • Food allergy • Food allergens • Cross-contact Also include the information found in Table 6.3, The “Big Eight” Food Allergens, on page 111, and Table 6.4, “Steps to Avoid Cross-Contact,” on page 113. Create a skit acting out the steps to avoid cross-contact, found in Table 6.4 on page 113.
Academically gifted	Research the history of allergen awareness in the past 100 years. How have food allergens and awareness of food allergies changed over time? Write an essay with your findings.
ELL	Create a menu that serves dishes with the “Big Eight” food allergens, found in Table 6.3. Draw or find images of dishes that highlight at least eight different items. Create special warning signs and symbols to note the different allergens. Pair with another student or work in groups to write skits or film short videos that show how to serve guests with food allergies, and how to prep food for guests with food allergies. Use the information found on pages 112–113.

Reinforce and Review

- Allergic reactions occur when a protein or other unique chemical of a food enters the gut and bloodstream of a person with antibodies or other sensitivities to that unique molecule.
- The body begins to fight the molecule as if it were a disease, and produces histamine in defense. Histamine can cause swelling. Severe swelling can block off the airway of an allergic person, causing death. Immediate medical attention is necessary. Call 911, and administer antihistamines and epinephrine (Epi-Pen), as appropriate. If an allergic attack is severe, there is no time to lose.
- Some allergies are thought to be caused by the introduction of foods too early during infancy.
- Other allergies are “idiopathic,” or of unknown cause.
- There is thought today that some allergies are increasing due to food-processing methods (e.g., peanut processing).

Discuss

- What are the main allergens in the United States?
- Is it possible to have both a peanut allergy and a tree nut allergy?
- What is cross-contact?
- How can cross-contact be avoided especially with regard to allergens?

Vocabulary

- **Food allergy:** The body’s negative reaction to a food protein.
- **Food allergens:** The naturally occurring proteins that cause allergic reactions.
- **Cross-contact:** When a food item containing an allergen comes in contact with another food item and their proteins mix; refers specifically to food allergens.

Homework Activity: Writing

Allergies

Have students research an allergen (peanuts, shellfish, etc.) in the United States and write a one-page essay answering the following questions:

- Is the incidence rising or falling?
- What might be the cause of the change?
- What can be done?
- What are the risks of the allergen?
- Who is affected?
- What is the treatment?
- What does this mean for the restaurant industry?
- Have students present their findings to the class.

PAGES 113–114

FOOD DEFENSE

Customized Instruction

Learning disabled	Search the FDA's website to define what the A.L.E.R.T. system is: http://www.fda.gov/Food/FoodDefense/ToolsEducationalMaterials/ucm353774.htm .
Academically gifted	Use the website http://www.fda.gov/Food/FoodDefense/ToolsEducationalMaterials/ucm353774.htm to take the Food Defense 101 course. Report back to your classmates a summary of what you learned. Write an essay on the history of food-defense systems. How has this changed in more modern times?
ELL	Search the Internet for stories or videos of intentional food contamination. Design a food-defense system to prevent the contamination.

Reinforce and Review

- If the students are not aware of real cases of food terrorism, they could research past incidents.
- One would be the 1984 bioterrorism attack of salad bars in The Dalles, Oregon.

Discuss

- Ask the students, "Have you ever heard of deliberate contamination of food at a foodservice operation?"
- Perhaps the students have heard or read about such things. They may be aware of other sorts of deliberate poisoning, such as anthrax-laden white powder on mailed letters or packages.
- Discuss the various ways that they can defend the food supply of their establishment.

PAGE 114

U.S. REGULATION OF FOOD SAFETY

Customized Instruction

Learning disabled	Create a mock inspection for the kitchen and classroom.
Academically gifted	Review the FDA Food Code, and work with students to write an inspection plan for the kitchen and classroom.
ELL	Working with classmates, take or find images of the inspection plan, paying attention to what areas need to be addressed and what violations to look for.

Reinforce and Review

- The Food and Drug Administration (FDA) oversees food production businesses. It is part of the Department of Health and Human Services. This is a different agency than the U.S. Department of Agriculture (USDA), which also oversees food production and distribution.
- The importance of compliance with regulations cannot be overstated to the students. The students might not yet be used to accountability and responsibility.
- In a foodservice operation, lack of compliance has serious and expensive consequences.

Discuss

- What are the standards of the local health department?
- Does anyone in the class already have a local food handler's permit? If so, have the student (or students) explain the process of obtaining one.
- Self-inspection is a form of accountability. Have the students experienced this in their own lives? How would it harm a fine restaurant to disregard the local public health regulations?

Vocabulary

- **Inspection:** A formal review or examination conducted to see if an operation is following food safety laws.

Knowledge Check Answers (Page 114)

1. Servers should tell the guest how each dish is made, tell the guest about any "secret" ingredients that may contain allergens, suggest alternative menu items that don't have the food allergen, identify the allergen special order, and hand-deliver the allergen special order to the guest.
2. The FDA writes the FDA Food Code and each state adopts the code as it sees fit. State and local health departments then enforce these laws.

PAGE 115

CASE STUDY FOLLOW-UP ANSWERS: "A SAFE OPERATION"

1. Managers are responsible for ensuring that their staff is properly trained and that there is a safe flow of food.
2. Tanya needs to remember that safety always comes first. Moving quickly may require additional staff, or in cases like this, safety may have to trump time.

PAGES 116–117

CHAPTER ACTIVITIES ANSWERS

- **Commercial Pitch:** Student answers will vary, but they should reflect the summation of learning in this chapter regarding the avoidance of cross-contact and steps to ensure that guests with allergies are safe. The activity would best be completed at the end of the content.

- **Pick a Pathogen:** Answers will vary; however, the content concerning Forms of Contamination on pages 104–110 will best assist students in beginning research. The Internet or library will provide additional resources.
- **How Fast Does It Grow?:** In the first container, at 72 hours, there are 4 bacteria (2×2). At 39°F (4°C), the bacteria double every 36 hours. For the second container, at 55°F (13°C), the bacteria double every 6 hours. At the 12-hour mark, there are 4 bacteria (2×2). There are 8 bacteria at 18 hours (4×2), 16 bacteria at 24 hours (8×2), 32 at 30 hours (16×2), 64 at 36 hours (32×2), 128 at 42 hours (64×2), 256 at 48 hours (128×2), 512 at 54 hours (256×2), 1,024 at 60 hours (512×2), 2,048 at 66 hours ($1,024 \times 2$), and 4,096 bacteria at 72 hours ($2,048 \times 2$).
- **Public Record:** These reports may be available online, at the country health department, or through another local agency. Some local newspapers may even publish the reports.
- **Careers in Food Safety:** Student answers will vary. For example, most health inspectors need a Bachelor of Science to perform the tasks of the job. Some positions may require a Master of Science in chemistry, or other science-related disciplines. Many registered dietitians have training in chemistry or upper-level mathematics, and often perform inspections in places like hospitals or long-term-care facilities. Consult the Internet to direct the research around some interest groups in your classes, like food science or another similar direction.
- **How to Handle an Outbreak:** Student answers will vary. The FDA's website will be helpful in answering this. Be sure students include information concerning how the outbreak could have been avoided.

PAGES 118–119**EXAM PREP ANSWERS**

1. B (p. 102)

5. B (p. 106)

8. C (p. 113)

2. A (p. 103)

6. C (p. 109)

9. A (p. 113)

3. B (p. 105)

7. C (p. 111)

10. C (p. 114)

4. A (p. 107)

Chapter 7

Teacher's Companion

CHAPTER OVERVIEW

Chapter 7 covers good personal hygiene, including the importance of handwashing, cleaning and sanitizing, developing a cleaning program, and controlling pests.

CHAPTER OBJECTIVES

- 7.1 List personal behaviors that can contaminate food.
- 7.2 List the steps to proper handwashing, and identify when hands should be washed.
- 7.3 Identify proper personal hygiene practices and appropriate work attire.
- 7.4 Identify ways to handle ready-to-eat food safely.
- 7.5 Identify when food handlers should be prevented from working around food or from working in the operation.
- 7.6 Explain how to maintain a clean and sanitary operation.
- 7.7 Outline procedures for cleaning and sanitizing tools and equipment.
- 7.8 Identify factors that affect the effectiveness of sanitizers.
- 7.9 List the elements of a master cleaning schedule.
- 7.10 Outline procedures for managing pests.

ADVANCE PREPARATION

Review	- Chapter 7, pages 120–139 - Unit case study, “A Safe Operation,” pages 98–99
Contact	The Director of Plant Services for the School District (in charge of all custodial staff) and arrange for the pest-management service to come in to speak to class, as well as the Director of Plant Services. Have students follow on a walk-through to see all areas of the pest-control inspection.

(continued)

Contact (cont)	• A commercial kitchen equipment provider or manufacturer of equipment in your kitchen. Ask the provider to send a representative to speak to the class about proper cleaning and maintenance of the equipment. (Pro tip—film the way the provider disassembles equipment, like a dishwasher, and then reassembles it. This is a great way to capture the moment for later training or for reference.) • A commercial chemical and cleaning supply provider. Request that your salesperson send a chemical sales representative to speak to the students about proper chemical use. Make sure students are aware of the SDS book, and that it is updated. • A fire marshal to discuss all the various areas that are inspected, and why they are important.
Prepare	• Soap, water, towels, hand sanitizer, and gloves for handwashing practice • September is National Food Safety month—check out http://www.foodsafetymonth.com/Home for videos, activities, and more.

CHAPTER BREAKDOWN

PAGE 122	INTRODUCTION
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Discuss

- Proper personal hygiene practices can prevent pathogens from spreading.
- Handwashing is an essential skill that requires attention and practice.
- There are many ways to spread illness and infection to another person. Ask students to discuss these from past experience.

PAGES 122–127	HOW TO PREVENT FOOD HANDLERS FROM CONTAMINATING FOOD
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Customized Instruction

Learning disabled	Find or create images that show: • How food handlers contaminate food. (Use the bullet points listed on page 122 as the actions that the student will find images or video to define.) • How to prevent food handlers from spreading foodborne illnesses. (Use the bullet points listed under Personal Cleanliness and Work Attire on page 123.) • When food handlers should wash their hands. (Use the bullet points listed under Handwashing on page 123.) Film a video covering all the bullet points listed under the Essential Skills feature How to Use Gloves, on page 126.
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(continued)

Academically gifted	Search the Centers for Disease Control website for additional statistics related to handwashing, outside of the statistic listed in the Safety sidebar on page 123. Write a summary and create a poster to present to the class. Use Table 7.3 on page 127 to guide research into how to handle staff illness. Where do guidelines come from? Write a summary of your findings, and create a mock manual of how to handle illness for your own restaurant.
ELL	Create videos to demonstrate the steps for correct handwashing and hand maintenance. Use Table 7.1 on page 124 and Table 7.2 on page 125 as guides. Create or find images that show the “dos and don’ts” of personal cleanliness and work attire using the related bullet points on page 123. The bullet points describe what to do and what not to do—provide images to show the proper procedure. Use a grocery ad or a food magazine to cut out photos of food. Create a poster by pasting the images on the board or paper. Circle all items that are ready-to-eat (RTE). Include a definition at the top of the poster.

Reinforce and Review

- Food-handling personnel includes all employees who work in a restaurant, whether or not they directly touch or handle food.
- Foodservice operations need clearly defined requirements concerning ill personnel.
- Video: How to Correctly Wash Hands: Shows how to correctly wash hands according to the steps on page 124, Table 7.1.
- Essential Skills: How to Use Gloves: Lists the dos and don’ts to using gloves and when gloves need to be changed. Reinforce and demonstrate visually how to use gloves. Check for understanding by watching students demonstrate this essential skill.

Discuss

- It is important and customary for foodservice employees to keep their hair restrained and covered. Even beards are covered. Do the students understand why?
- What other professions use hand-care guidelines?
- Why is it important to restrict sick employees?
- Do students have feelings about fingers, fingernails, and their decorations?
- Do students ever feel obligated to go to school or work even when they are sick? How could this impact a foodservice establishment?

Vocabulary Review

- **Food handlers:** All foodservice employees who either handle food directly or work with the surfaces that the food will touch.

Knowledge Check Answers (Page 125)

1. Personal behaviors that can contaminate food include:
 - Having a foodborne illness
 - Having exposed wounds that are infected
 - Having contact with a person who is sick
 - Touching of the hair, face, or body and then not washing hands
 - Touching anything that may contaminate hands and then not washing them
 - Having symptoms such as diarrhea, vomiting, or jaundice (a yellowing of the eyes or skin)
 - Eating, drinking, smoking, or chewing gum or tobacco while preparing or serving food
 - Touching anything that has come into contact with human blood
2. Personal hygiene policies address personal cleanliness, clothing, hand care, and health.
3. Hand-care guidelines include:
 - Keep fingernails short and clean.
 - Do not wear false nails.
 - Do not wear nail polish.
 - Wear a bandage over wounds on hands and arms.
4. (1) Wet hands and arms with running water. (2) Apply soap. (3) Scrub hands and arms vigorously for 10 to 15 seconds. (4) Rinse hands and arms thoroughly under running water. (5) Dry hands and arms with a single-use paper towel or warm-air hand dryer.

Knowledge Check Answers (Page 126)

1. Ready-to-eat foods are food items that can be eaten without further preparation, washing, or cooking.
2. Gloves should be changed as soon as they become dirty or torn. They should also be changed before beginning a different task; at least every four hours during continual use (on the same task); and after handling raw meat, seafood, or poultry, and before handling ready-to-eat food.

In-Class Activity: Physical

Handwashing University

Have the students follow the procedure for correct handwashing. They should practice in the classroom. They can evaluate one another in partnerships or groups.

Each student's technique should be viewed by the instructor at some point in the activity.

In-Class Activity: Literacy

Personal Hygiene—KWL Chart to Guide Learning

Have the students fold a clean sheet of paper into thirds. Have them label the first column “K” for “Know,” label the second column “W” for “Want to Learn,” and label the third column “L” for “Learned.”

The students will write what they already know about personal hygiene in the “K” column. The students will write what they expect and hope to learn about hygiene in foodservice in the “W” column. The students will leave the “L” column blank until the end of the section.

After you have completed the section, students can complete the KWL chart.

Have students discuss this in class.

PAGES 127–132 HOW TO CLEAN EFFECTIVELY

Customized Instruction

Learning disabled	Create a video or skit that describes the differences between cleaning and sanitizing—use pages 127–129. Create a video or poster to describe the steps to cleaning and maintaining a dishwasher, as listed in bullet points on pages 130–131.
Academically gifted	Research the different types of sanitizers. What are the appropriate ranges for safe levels? Create a log for dish washers to initial after checking the proper range. How often should the levels be taken and logged? Take into account different types of dishwashing machines, and methods of sanitizing. Use the most recent <i>FDA Food Code</i> to reference the guidelines and regulations. Research the role of new scientific technologies in checking for things like pathogen growth, pH levels, and other food safety–related items. What programs of study or careers combine hard sciences with the culinary world? Write a short review of any findings on scientific technologies and food safety. Prepare a report on the research findings for college and career opportunities to combine science and food. Share these findings with the class.
ELL	Tour the kitchen and create posters to show how to use the various commercial chemicals and dishwashing machines, and the three-compartment sink. Group cleaners by the type, listed in the bullet points on page 128, what they do, and what they should be used for. Inventory all smallwares in the kitchen. Create a list to show which items have the NSF or UL mark and which items do not. What is the mark? Why is it important? Include the answers on your list.

Reinforce and Review

- **Video: How to Clean and Sanitize a Surface** (page 128): This video shows the steps to cleaning and sanitizing a surface, as listed in the Essential Skills feature on page 129.
- **Essential Skills: Cleaning and Sanitizing a Surface:** Cleaning removes food and other dirt from a surface. Sanitizing reduces pathogens on a surface to safe levels.
- **Video: How to Use a Three-Compartment Sink:** This video illustrates the steps to using a three-compartment sink to match the content from the Essential Skills feature on page 132.
- **Essential Skills: Washing Kitchen Equipment in a Three-Compartment Sink:** There are five steps to cleaning in a three-compartment sink: (1) Remove food from dishes (Figure 7.10a). (2) Wash dishes in hot water and dish detergent (Figure 7.10b). (3) Rinse dishes (Figure 7.10c). (4) Sanitize dishes in hot water or solutions (Figure 7.10d). (5) Air-dry dishes (Figure 7.10e).

Discuss

- Help students to identify which areas of the kitchen would need to be cleaned and rinsed.
- Have students identify the areas that would need to be sanitized after cleaning.
- Can sanitizing be dangerous? How?
- Ask the students why dishes and equipment should be air-dried and not towel-dried.
- Why do professional kitchens need to have NSF-approved equipment? Discuss the two standards listed on page 131.

Vocabulary Review

- **Cleaning:** Process that removes food and other dirt from a surface.
- **Sanitizing:** Process that reduces pathogens on a surface to safe levels.
- **Cleaners:** Chemicals that remove food, dirt, rust, stains, minerals, and other deposits; cleaners include the following four groups: detergents, degreasers, delimers, and abrasive cleaners.
- **Detergents:** Cleaners that are either general purpose or heavy duty; general-purpose detergents remove fresh dirt and can be used on almost anything, whereas heavy-duty detergents remove wax, dried-on dirt, and baked-on grease.
- **Degreasers:** Cleaners that dissolve grease and work well where grease has burned on, such as on oven doors and range hoods.
- **Delimers:** Acid cleaners used on mineral deposits and dirt that other cleaners cannot remove; for example, they are designed to clean scaling (mineral deposits such as those left by hard water), rust stains, and tarnish.
- **Abrasive cleaners:** Cleaners with a scouring agent that helps scrub hard-to-remove dirt; dish washers often use abrasive cleaners to remove baked-on foods in pots and pans.
- **Contact time:** The amount of time that items being sanitized must be immersed in the sanitizing solution; the contact time depends on the type of sanitizer being used.

Knowledge Check Answers (Page 130)

1. Cleaning removes food and other dirt from a surface. Sanitizing reduces pathogens on a surface to safe levels.
2. The two methods of sanitizing are heat and chemical sanitizing. In heat sanitizing, items are soaked in water that is at least 171°F (77°C) for at least 30 seconds. In chemical sanitizing, items are soaked in chemicals.
3. Contact time, temperature, and concentration are three factors that influence the effectiveness of sanitizers.

In-Class Activity: Math

Make the Time

Because having a clean work environment is a huge part of food safety, you need to plan enough time at the end of your work shift for cleaning. This includes doing the following:

- Properly put away and secure all food. Estimated time is 15–18 minutes.
- Clean your worktable. Estimated time to clean is 10–14 minutes.
- Clean your tools. Estimated time to clean is 9–12 minutes.
- Sweep and mop your area. Estimated time is 15 minutes.

How soon would you need to stop working and start cleaning to get out of work at 10 p.m.? Provide the range of time based on the estimates above. (Tasks will take 49 minutes so you must begin the process by 9:11 p.m.)

Homework Activity: Science

Chemistry and Chemical Cleaners

Research the chemistry definition of a detergent. Research delimers.

Most delimers remove metal salts formed by divalent cations. What does this mean? What minerals are usually removed by delimers?

Write a one-page essay on the findings. Have students discuss in class.

In-Class Activity: Writing

Cleaning the Restaurant

Form teams of students.

The students will seek permission to visit the school foodservice department as a group. They will photograph, with permission, the various cleaning processes, equipment, and storage of a commercial kitchen.

Students will create a PowerPoint presentation or posters for the class. They will describe the cleaning process.

- Did the cleaning appear to be difficult?
- Was it done according to a master schedule?
- Was there adequate time to complete the cleaning?

PAGES 133–134

DEVELOPING A CLEANING PROGRAM

Customized Instruction

Learning disabled	Create a poster or graphic organizer to show what a cleaning program would look like for cleaning your room at home. Include examples of how to show what the three steps would look like in action. Use page 133.
Academically gifted	Create a master cleaning schedule for the kitchen lab, according to the equipment available at your location. Find and compile all recommended cleaning and maintenance procedures (usually found by looking on the manufacturer's website—make sure to check serial and model numbers). Then, assign students to work together in multitier groups to create posters to show what chemicals (with images) should be put into what buckets, to perform what task. Pair images with terms for all cleaning program–related key terms.
ELL	Use Figure 7.11 on page 133 to pair the equipment and action with the descriptions on the chart. Use the kitchen lab for hands-on experience.

Reinforce and Review

- Help the students understand that a regular cleaning schedule will keep equipment clean and ready.
- Waiting until things are dirty and then cleaning them while waiting to use them is unsafe and inefficient.
- The growth of pathogens should be considered when forming a cleaning plan.
- Equipment is vulnerable to time and temperature pathogen growth.

Discuss

- Do you think that cleaning enhances safety?
- What types of safety are improved by a master cleaning schedule?
- Is the safety only for the health of the customers?

Vocabulary

- **Cleaning program:** A system that organizes all of the cleaning and sanitizing tasks in the kitchen; restaurant and foodservice managers with the most effective cleaning programs focus on three things: (1) creating a master cleaning schedule, (2) training staff to follow the cleaning schedule, and (3) monitoring the program to make sure it works.

PAGES 134–135 DEVELOPING A CLEANING PROGRAM**Customized Instruction**

Learning disabled	Create a map of the kitchen. Find and show areas where pests could access the operation.
Academically gifted	Perform an audit of the kitchen using a template for integrated pest management (found on the Internet). Write a report to describe findings. How does your audit compare with the IPM program currently in place?
ELL	Create videos or graphic organizers with found images to describe how to prevent pests by paying attention to certain areas (use the bullet points listed on page 134 under Controlling Pests, and the additional guidelines for controlling pests listed in bullet points on page 135).

Reinforce and Review

- Managing pests may be critical to the reputation of the restaurant. If customers see a rodent or a cockroach in the dining room, they will probably tell friends about it. Ask students to think of ways rodents might have access to a restaurant.
- Keeping the kitchen and dining room extremely clean will deny the food to the pest.
- Pests can enter an operation in one of two ways. Sometimes they are brought inside with deliveries. They can also enter through openings in the building.
- It is well worth the expense of hiring a PCO to maintain the clean reputation of a restaurant.

Discuss

- How would insects have access to a restaurant?
- How can pests gain access to a foodservice establishment?

Knowledge Check Answers (Page 135)

1. Contact time depends on the type of sanitizer being used, but all solutions have specific time periods required for immersion
2. NSF International develops and publishes standards for sanitary equipment design.
3. A master cleaning schedule is a plan for properly cleaning and maintaining all aspects of the operation, to be implemented and followed by employees.
4. To prevent pests from entering an establishment, set up an integrated pest management program.
5. Pests must be controlled by an integrated pest management program, monitored by a licensed pest control operator.

PAGE 136

CASE STUDY FOLLOW-UP ANSWERS: “A SAFE OPERATION”

1. Bob contaminated potatoes with raw chicken by placing them on the same cutting board. He did not wash his hands or clean and sanitize his area before receiving the delivery. He also left out raw chicken at room temperature while putting the delivery away. Bob should also review all items and take temperatures with a thermometer to ensure items are outside the temperature danger zone. The order for putting items away during receiving is: dairy, meat, fresh poultry, fresh fish, then frozen food items, then produce, and dry goods last. When checking in delivery, Bob should have returned the shrimp, as the ice crystals and the package being frozen solid are signs that the item was thawed completely and refrozen, or time and temperature abused. The vegetables should be returned as well, as holes and dried wet marks can be signs of pest infestation or potential contamination.
2. The manager, Tanya, should make certain that proper receiving practices are taught to all employees that will receive deliveries. If Brian is exhibiting symptoms from an infectious condition, like vomiting, diarrhea, or jaundice, he needs to be excluded from the operation. Tanya needs to ask direct questions about his condition to determine the proper response. Even though he washed his hands very thoroughly, food handlers who are sick can spread pathogens to the food. Bob’s chicken must be hot held at 165°F (74°C). Infrared thermometers are not the best for this task—typically a bimetallic stemmed thermometer should be used, placed in multiple points in the chicken, to determine proper temperatures throughout the dense protein. Serving raw or undercooked chicken can lead to serious foodborne illness. The chicken must be recooked to the proper 165°F (74°C) temperature, or discarded.

PAGE 137

CHAPTER ACTIVITIES ANSWERS

- **What’s Your Style:** Group responses will vary; however, each group should address the current issues of tattoos, piercings, hairstyles, clothing and jewelry hazards, modesty, and other issues in regard to how they might affect food safety and customers’ views of the operation. Reference page 123.
- **Effective Handwashing:** Student answers will vary. Students should research and refer to the science of why proper handwashing kills bacteria. Reference pages 123–124.
- **Time to Be Clean:** It will take between 47 and 56 minutes to complete the cleaning. To get out of work by 11 p.m., cleaning must be started by 10:04 p.m.
- **Master Cleaning Schedule:** Each group will have a different plan and schedule. Keep food safety principles in mind while developing the cleaning schedule for the restroom and dining room, in addition to the kitchen. Use page 133 as a guide.
- **Pest Prevention:** Student answers will vary. Students should research at least two different companies that provide pest control, as well as various methods. Are there any new trends? What about the safety of the chemicals and their impact on the environment?
- **What Should I Do?:** Student responses will vary. The answer should address personnel and staffing issues. Safety should never be compromised. Allowing for the illness of an employee should be part of any management strategy. Use pages 126–127 for reference.

PAGES 138–139**EXAM PREP ANSWERS**

1. B (p. 127)

2. A (p. 134)

3. D (p. 124)

4. B (p. 133)

5. C (p. 125)

6. D (p. 127)

7. D (p. 127)

8. A (p. 123)

9. B (p. 126)

10. D (p. 129)

Chapter 8

Teacher's Companion

CHAPTER OVERVIEW

Chapter 8 covers the flow of food. Throughout the flow of food, it's important to limit the amount of time food is kept at unsafe temperatures and to minimize contamination risks. Understanding where contamination can happen in these steps and knowing how to prevent it are critical tasks for all restaurant and foodservice professionals.

CHAPTER OBJECTIVES

- 8.1 Identify ways to prevent cross-contamination.
- 8.2 Identify ways to prevent time-temperature abuse.
- 8.3 List the steps for calibrating a bimetallic stemmed thermometer using the ice-point method.
- 8.4 Identify characteristics of an approved food source.
- 8.5 Identify criteria for accepting or rejecting food during receiving.
- 8.6 Outline procedures for storing food.
- 8.7 Outline procedures for preparing and cooking various TCS food.
- 8.8 Outline procedures for holding, cooling, and reheating TCS food.
- 8.9 Identify ways to handle food ready for service.
- 8.10 Outline procedures for preparing and serving food for off-site service.
- 8.11 Explain what a food safety management system is and why it's important.

ADVANCE PREPARATION

Review	- Chapter 8, pages 140–157 - Unit case study, “A Safe Operation,” pages 98–99
Contact	- Local health department for inspector or sanitarian. - State Restaurant Association for information on Food Handler or ServSafe Manager books and certifications, or search at www.servsafe.com for additional resources - School director of foodservice to review active managerial plans in place - Food provider representative, to discuss why they are considered an approved, reputable supplier
Prepare	- Refer to ServSafe Coursebook or ServSafe Manager for additional information. - Search for images that can help to create a word wall for the key terms. - Look for templates online for temperature logs for food, coolers and freezers, and cooling foods properly. Additional logs for dry storage areas or receiving deliveries are also useful.

CHAPTER BREAKDOWN

PAGE 142

INTRODUCTION

Customized Instruction

Learning disabled	Create an image that defines the flow of food based on the headings shown in all-capital letters throughout the chapter: purchase and receive, store, prepare, cook, serve.
Academically gifted	How does the flow of food relate to foodborne-illness outbreaks? Use examples from stories of foodborne-illness outbreaks found in Chapter 7 to determine where in the flow of food the problem occurred. Write a summary and present findings to the class.
ELL	Find images that relate to the flow of food. Describe in a picture how the flow of food starts for your family at home.

Discuss

- The flow of food begins when an operation buys food. The flow of food ends with the guest being served.
- The safety of the food supply should be guarded at each step.

Customized Instruction

Learning disabled	Find images of common foods—both TCS and RTE—along with images of chemicals that could get into RTE foods. For example, raw chicken and lettuce, as seen in Figure 8.1. Using cutting boards and common tools, like tongs, demonstrate what cross-contamination is, using page 142 as a guide.
Academically gifted	Research a system for preventing cross-contamination, such as a color coding system for cutting boards. Write out a step-by-step process for three different systems to prevent cross-contamination. Present these systems to the class and demonstrate the systems.
ELL	Find images or video clips to show how to prevent cross-contamination. Use the bullet points on page 142 and Figures 8.1 and 8.2 as the guide for the information that needs to be defined.

Reinforce and Review

- Responsibility for keeping food safe begins before a finished plate is presented to a customer.
- Cross-contamination is the transfer of pathogens from one surface or food to another.

Discuss

- How can cross-contamination in foodservice be prevented?

Vocabulary Review

- **Flow of food:** The path that food takes in an operation, from the operation's purchase to its service of the food.
- **Cross-contamination:** Result when pathogens spread from one surface or food to another.

Homework Activity: Writing

Food Safety at Home

The students learn about cross-contamination and the flow of food. These processes provide challenges in the home as well as in foodservice.

Have the students evaluate their home kitchen for the flow of food and for potential cross-contamination problems. Other food handling practices that they can observe, good or bad, may be included in this activity as well.

Have the students make a list of possible problems with their home food system. The students will determine a workable solution to the problem. The students implement the solution and write a one-page report on the results.

PAGES 143–145 **TIME-TEMPERATURE ABUSE****Customized Instruction**

Learning disabled	Create a scenario to share with the class that demonstrates time and temperature abuse; for example: “My grandmother makes potato salad with RTE and TCS food and leaves it out all day at a picnic,” or “I left pizza out on the table all night and still ate it in the morning.” Write down the scenario and share with the class. Demonstrate how to take the temperature of a food item, using the information in the first paragraph from page 144.
Academically gifted	Research and present the many types of thermometers and their uses, as mentioned in the Did You Know sidebar on page 144. Demonstrate the boiling-point method for calibrating a thermometer, as described on page 145. Present an argument to the class for why the ice-point method is the most common method—provide pros and cons of each method.
ELL	Use a bimetallic stemmed thermometer to create a diagram of the different parts, as listed in Figure 8.4. Demonstrate how to calibrate a thermometer, using the ice-point method described on page 145. Record a video or perform a live demonstration.

Reinforce and Review

- It is important when using a bimetallic stemmed thermometer to insert the long probe up to the dimple. It is useful for measuring the temperature of thick cuts of meat.
- Having a thermometer handy allows food to be checked periodically. The probe should be completely cleaned and sanitized before being used in food.
- Video: How to Calibrate a Bimetallic Stemmed Thermometer: This video shows the live action of the content provided in the Essential Skills feature titled Ice-Point Method for Calibrating a Thermometer.
- Essential Skills: Ice-Point Method for Calibrating a Thermometer. It is also important to keep thermometers cleaned and sanitized to prevent cross-contamination. They are considered a food-contact surface and must be washed, rinsed, sanitized, and air-dried. Be sure the sanitizing solution you use is for food-contact surfaces. Keep storage cases clean as well.

Discuss

- Why is it important to accurately read a food thermometer?
- Why is it important to accurately measure the temperature of foods?
- Should the temperatures of foods be recorded or noted?
- Why would this be beneficial to a foodservice operation?

Vocabulary Review

- **Time-temperature abuse:** Result when food has remained too long in the temperature danger zone, 41°F to 135°F (5°C to 57°C), which is the range in which pathogens grow well; the longer food stays in the temperature danger zone, the more time pathogens have to grow. In addition, food is time-temperature abused any time it is cooked to the wrong internal temperature, held at the wrong temperature, or cooled or reheated incorrectly.
- **Bimetallic stemmed thermometer:** This type of thermometer can check temperatures from 0°F to 220°F (-18°C to 104°C) through its metal stem, which makes it useful for checking both hot and cold types of food. The sensing area of the thermometer goes from the tip of the stem to the dimple; when checking temperature, insert the stem into the food up to the dimple.
- **Calibrated:** To adjust a thermometer to ensure it gives a correct reading.
- **Ice-point method:** To calibrate, or adjust, a thermometer based on the temperature at which water freezes in order to ensure its accuracy.
- **Boiling-point method:** To calibrate, or adjust, a thermometer based on the temperature at which water boils in order to ensure its accuracy.
- **Boiling:** Describes the point where water is hot enough that bubbles form and rise to the top as vapor (steam).

Knowledge Check Answers (Page 145)

1. Cross-contamination is the transfer of pathogens from one surface or food to another. To prevent cross-contamination, separate raw foods from ready-to-eat foods and make sure workstations are cleaned and sanitized.
2. The longer food stays in the temperature danger zone, the more time pathogens have to grow.
3. The ice-point method of calibration is most common.

PAGES 146–147

PURCHASING AND RECEIVING

Customized Instruction

Learning disabled	Use the three steps listed on page 146 to show (demonstration or video) how to take the temperature of food items during the receiving process.
Academically gifted	If possible, allow the student to take the Food Handler course online, or the ServSafe Manager course and exam. Then, allow the student to visit and watch the school foodservice department perform the acts of purchasing, receiving, and storing. With permission, the student may help assist in these steps. Record notes on all the information witnessed. Write an essay and create a presentation to report to the class.
ELL	Find or create images to describe some of the packaging problems listed in the first paragraph on page 147. Additionally, try to find images or videos that describe the signs of poor food quality, also listed in the bullet points on page 147.

Reinforce and Review

- Make sure that vendors are well-identified, are reputable, and keep careful records.
- The “sell-by” date is different from the expiration, or “use-by,” date.
- A food product will not be fresh after the expiration date.
- Specific foods have guidelines that might be outside of the traditional temperature danger zone numbers. Review and discuss the differences in these particular products: shellfish, shell eggs, and milk and dairy products.

Discuss

- Why is it important that deliveries be measured for temperature?
- At what temperatures should foods be delivered? Discuss both hot and cold foods.
- If a TCS food is arriving at a temperature within the danger zone, what should the foodservice operation do with the delivery?
- What aspects of a package should be inspected?
- When should a package be rejected?

Vocabulary

- **Approved food source:** A source of food that has been inspected by appropriate agencies (e.g., government agencies) and meets all applicable local, state, and federal laws.

Knowledge Check Answers (Page 147)

1. An approved food source is one that has been inspected by appropriate agencies and meets all applicable local, state, and federal laws.
2. Live shellfish should be received at an air temperature of 45°F (7°C) and an internal temperature no greater than 50°F (10°C). Once received, the shellfish must be cooled to 41°F (5°C) or lower in four hours. Live shellfish must be received with shell stock identification tags. These tags must remain attached to the delivery container until all of the shellfish have been used. Employees must write on the tags the date that the last shellfish was sold or served from the container. Operators must keep these tags on file for 90 days from the date written on them.

PAGES 148–149
STORAGE

Customized Instruction

Learning disabled	Practice labeling food items in the cooler using the guidelines on page 148. Day-one date plus six days equals seven days. Show how to use the FIFO method to label items in the dry storage room. Use page 148.
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(continued)

Academically gifted	Create a chart that shows food storage order from top to bottom using required minimum internal cooking times. Make sure to include the temperatures on the poster, and use images to describe all the different food categories. Present to the class. Write a memo to describe how to teach employees how to properly label food items. Reference the FDA <i>Food Code</i> and page 148 of the text.
ELL	Use Figure 8.12 on page 149 and the list for ordering food items from top to bottom in coolers, numbered 1–5 on page 149, to create a poster or graphic organizer.

Reinforce and Review

- The order for storing foods is based on the required minimum internal temperature of each food, with RTE foods at the top, followed by the lowest to highest minimum internal temperatures required.
- First in, first out, or FIFO, is a system of rotation that makes the most economical sense. It uses food efficiently.
- All foods should be evaluated by date and observation for quality and freshness before using.
- Poor management of food rotation will result in a first in, last out, or FILO, system.

Discuss

- Storing raw foods below ready-to-eat foods is a simple strategy to use at home.
- Cross-contamination may be avoided by having plenty of high-quality equipment so that there is always something clean to use.
- Cutting boards may be a source of cross-contamination. They must be cared for and cleaned and sanitized correctly.

Vocabulary

- **First-in, first-out (FIFO):** A method of rotating food in storage to use the oldest inventory first, which could include the following: (1) Identify the food item's use-by or expiration date, which is usually somewhere on the packaging; (2) store items with the earliest use-by or expiration dates in front of items with later dates; (3) once shelved, use those items stored in front first.

In-Class Activity: Physical

Storing Food Correctly in Coolers

Set up a cooler with foods that are purposely stored in the wrong order (RTE foods on the bottom, etc.). Or, label empty pans with signs describing what they are (ground beef, lettuce mix, chicken breasts), and place them on shelves. Have students move the items or pans into the correct storage order. Review Table 8.2 for information.

In-Class Activity: Math

Inventory and Date Labeling

Have students take the inventory of all items in the kitchen dry storage area (ask for access to the foodservice kitchen, if necessary). Count and make note of all of the items on the shelves. Have students take note of labeling practices; for example, whether items are labeled properly or not. Research online what products have an extended shelf life—some dry goods can be stored safely for six months. Have students detail findings in a report, and then create an action plan for what items to correct. Have students properly store and correctly label all items. This activity can also be used for the coolers and freezers—all items that should be labeled.

Homework Activity: Science

Pathogens and Freezing

Have students research pathogens and freezing. Students should prepare a one-page essay that answers the following questions:

- How can pathogens reproduce after being frozen?
- Why are human cells destroyed by freezing?
- Why can microbes survive?

PAGES 149–150

PREPARATION AND COOKING

Customized Instruction

Learning disabled	Create a poster to show the proper ways to thaw TCS foods, listed in bullet points on page 149.
Academically gifted	Research policies for serving certain items to high-risk populations. What are these items and why should they not be served? Write an essay with your findings.
ELL	Find or create images for the information presented in Table 8.2, Cooking Requirements for Specific Types of Food. Match the food types with the proper required minimum internal temperatures. How does this connect to proper storage?

Reinforce and Review

- Help the students understand that frozen pathogens will not reproduce, but they can again after they thaw.
- Think of always keeping TCS foods out of the danger zone.
- Remind the students that thawing in a microwave will warm the food, perhaps into the danger zone, from the interior to the exterior. It's fine if the food is going to be cooked right away.

Discuss

- What are the common cooking methods?
- How can temperatures of food items be checked when using these methods?
- What type of thermometer is best for checking the temperature of the inner part of a food item?
- What is the ideal internal temperature reading?

Knowledge Check Answers (Page 150)

1. The Caesar salad would be stored on top.
2. Freezing does not kill pathogens, but frozen pathogens cannot reproduce.

PAGES 151–153 HOLDING, COOLING, AND REHEATING

Customized Instruction

Learning disabled	Create or find images to describe the steps to holding TCS foods safely, listed on page 151.
Academically gifted	Create an infographic on how to cool foods properly. Create a presentation, in the visual format of choice. Then, create a temperature log that captures the process (use the Internet to search for templates).
ELL	Create or find images to describe how to serve food in ways that keep it safe, using the bullet points listed on page 152.

Reinforce and Review

- Hot TCS foods must be held hot, and cold TCS foods must be held cold. Whether the refrigerator is an enormous warehouse or a small cooler, the temperature must remain below 41°F (5°C) for cold TCS foods.
- The quality of the food item should be carefully evaluated after reheating to see if it has lost flavor, texture, or appearance.
- Cooling involves two phases. The first phase is essential for safe cooling. If it isn't completed properly, the food must either be thrown out or reheated and then cooled again.

Discuss

- Ask the students why 70°F up to 125°F (21°C to 52°C) would be a range for fast growth of pathogens.
- How would an item be cooled quickly, within two hours?
- Do the students think that hot foods should be placed directly into the refrigerator?
- What have they learned about heat transfer?

Vocabulary

- **Ice-water bath:** A large pot filled with ice water in which containers of hot food can be placed in order for the food to be cooled more quickly and evenly, with frequent stirring.
- **Ice paddles:** Plastic paddles that can be filled with ice or with water and then frozen and used to stir food in order to cool it quickly.

Knowledge Check Answers (Page 153)

1. To cool food safely, reduce the size of food into smaller amounts by either cutting large food items into smaller pieces or dividing large containers of food into smaller containers, put food into an ice bath, or use ice paddles to stir the food.
2. You can reheat food that will be served immediately to any temperature. However, you must make sure the food was cooked and cooled correctly.
3. Hold dishes by the bottom or edge, carry glasses in a rack or on a tray, hold flatware by the handle, minimize bare-hand contact, and use ice scoops or tongs to get ice.
4. They can contaminate food by handling the food-contact areas of glasses, utensils, and dishes.

PAGE 153

OFF-SITE FOODSERVICE

Customized Instruction

Learning disabled	Find images that show and define a variety of off-site services. What ways have you had food delivered to you that help protect against time and temperature abuse?
Academically gifted	Create a video to demonstrate the proper way to serve food. Use Table 8.3 on the guidelines for service staff when serving food and the guidelines for off-site foodservice. Create the video as if it were a training video for employees in your restaurant. This activity can be modified for multitier grouping for a whole-class activity.
ELL	Create or find images that show the specific procedures to keep food safe for off-site service, using the bullet points on page 153.

Reinforce and Review

- Food prepared and served off-site must be packed in insulated food containers and checked for internal food temperature regularly. The vehicle used to transport food must be clean.

Discuss

- Ask the students to list the various circumstances where food might be served off-site.
- Have the students discuss the demands of a catering operation for food safety.
- Are any of the students planning a career in off-site catering?

Vocabulary

- **Off-site service:** Service of food away from the kitchen operation, including delivery, mobile/temporary kitchens, and vending machines.

PAGE 154

FOOD SAFETY MANAGEMENT SYSTEM

Customized Instruction

Learning disabled	List as many activities as you can think of that are a part of a food safety management system—policies and procedures that work together to prevent foodborne illness.
Academically gifted	Research HACCP plans. Interview the foodservice director on the HACCP plans in place in the school foodservice kitchens. Write a report on the findings, and create a sample HACCP plan for some key items in the classroom, like shell eggs or raw poultry.
ELL	Create a graphic organizer to show images that can define food safety management systems and active managerial control.

Reinforce and Review

- HACCP is a system of analyzing a process for potential problems so that they can be avoided before they occur.

Discuss

- Why do you think that HACCP and safety procedures are written down?
- Why might records need to be kept?

Vocabulary

- **Food safety management system:** A group of procedures and practices that work together to prevent foodborne illness; combined, these procedures and practices control risks and hazards throughout the flow of food in an operation.
- **Active managerial control:** A manager taking responsibility to actively control risk factors for foodborne illness in a proactive, rather than reactive, way, including anticipating the risks and planning for them using such tools as training programs, manager supervision, and the incorporation of standard operating procedures (SOPs), or a more complex HACCP (Hazard Analysis Critical Control Point) program.
- **Hazard Analysis Critical Control Point (HACCP):** An example of a food safety management system; HACCP identifies major biological, chemical, or physical hazards at specific points within a food's flow through the operation so that those hazards can be prevented, eliminated, or reduced. An effective HACCP system is unique to the operation and based upon a written plan that considers an operation's menu, guests, equipment, processes, and operations.

Knowledge Check Answers (Page 154)

1. Use insulated food containers that keep food out of the temperature danger zone; use only food-grade containers that won't mix, leak, or spill food; check internal food temperatures regularly; clean the inside of delivery vehicles regularly; label food with a use-by date and time, as well as reheating and service instructions for staff at off-site locations; make sure the service site has the correct utilities; and store raw meat, poultry, and seafood separately from ready-to-eat food.
2. Managers can actively control risks by using simple tools such as training programs, manager supervision, and the incorporation of standard operating procedures.

Homework Activity: Literacy

NASA and HAACP

Read and discuss the article "From Farm to Fork: How Space Food Standards Impacted the Food Industry and Changed Food Safety Standards," found online at <https://history.nasa.gov/sp4801-chapter12.pdf>. Students will first read the article and write a summary of the main points. Then, have students discuss in small groups, and create a summary of the article.

PAGE 156

CASE STUDY FOLLOW-UP ANSWERS: "A SAFE OPERATION"

1. Tanya needs to retrain her staff. It is the manager's responsibility to actively control risk factors for foodborne illness. This is called active managerial control. It is important to note that active managerial control is proactive rather than reactive; you must anticipate the risks and plan for them.
2. One of the best ways to prevent foodborne illnesses is to develop and follow a food safety management system.

PAGE 156

CHAPTER ACTIVITIES ANSWERS

- **Storing Food:** First, tend to the oysters and chicken. Immediately refrigerate the chicken properly. The oysters must have the paperwork completed properly for record keeping. Then process the fresh vegetables for safe and optimal storage. Finally, the flour must be stored in a FIFO system that is safe from insects or rodents.
- **Steak Tartare:** Student answers will vary, but students should come to the conclusion from research that steak tartare should not be fed to a child—children are considered a high-risk population that should not eat raw meat.
- **Cool It Down:** (1) The meat sauce would need to reach 41°F (5°C) or lower by 7 p.m., which would be within six hours total. (2) The chili would need to reach 41°F (5°C) or lower by 4:30 p.m., which would be within six hours total.
- **Safeguarding the Flow of Food:** Group ideas will vary. Make sure each group allows for adequate and proper temperature controls, time controls, and sanitation in the setting. Reference page 153.

- **Making a Food Safety Management System Work:** Student answers will vary, but they should draw from the safety content of the chapter and ensure the safe flow of food through an operation, as well as the necessary training and follow-up to make it happen.
- **The Flow of Protein:** Student answers will vary. The chosen protein should be safely taken through all of the steps at an operation, from purchasing and receiving all the way through to final service to the guest.

PAGE 157**EXAM PREP ANSWERS**

1. B (p. 142)

5. A (p. 154)

8. A (p. 146)

2. D (p. 153)

6. D (p. 144)

9. C (p. 143)

3. C (p. 151)

7. D (p. 150)

10. B (p. 153)

4. C (p. 149)

Chapter 9

Teacher's Companion

CHAPTER OVERVIEW

Chapter 9 discusses laws and regulations that affect workplace safety and describes steps employers can take to provide safe working conditions.

CHAPTER OBJECTIVES

- 9.1 State who is legally responsible for providing a safe environment and ensuring safe practices.
- 9.2 Define the role of Occupational Safety and Health Administration regulations.
- 9.3 State the Hazard Communication Standard requirements for employers.
- 9.4 List the requirements for storing hazardous chemicals in an operation.
- 9.5 Explain the importance of general safety audits and safety training.
- 9.6 List the steps in an accident investigation.
- 9.7 Explain the purpose of an emergency plan.
- 9.8 Define the terms harassment-free environment and mutually respectful workplace.
- 9.9 List guidelines for handling harassment claims.

ADVANCE PREPARATION

Review	• Chapter 9, pages 158–173 • Unit case study, “A Safe Operation,” pages 98–99 • OSHA’s website at www.osha.gov to download the OSHA Form 301: Injury and Illness Report, and the OSHA poster at https://www.osha.gov/Publications/poster.html • The NSF website at www.nsf.org • The Underwriters Laboratories’ website at www.ul.com • District or campus safety policies, especially those involving emergency and first-aid treatment
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(continued)

Contact	• An OSHA inspector • The local branch of the American Red Cross, to discuss emergency readiness • A representative from a commercial chemical distributor • A local lawyer that may specialize in labor law • The foodservice director in the school district, to provide a sample kitchen emergency plan
Prepare	• An SDS for all chemicals used at the school • A safety audit template useful for your kitchen and equipment • Information on the Fair Labor Standards Act (FLSA), from https://www.dol.gov/whd/regs/compliance/hrg.htm and http://www.continuetolearn.uiowa.edu/laborctr/child_labor/about/us_history.html • Sample training documents for foodservice staff on chemical safety, evacuation plans, fire prevention, accident prevention, or harassment

CHAPTER BREAKDOWN

PAGE 160

INTRODUCTION

Discuss

- Address the importance of keeping both employees and guests safe.
- Point out the importance of safety to everything that takes place at work, and relate this to maintaining a safe classroom environment.

PAGES 160–161

SAFETY AND THE LAW

Customized Instruction

Learning disabled	Use the information in Table 9.1 on the Fair Labor Standards Act to create a video on what working teens can and cannot do in the workplace depending on their age. Alternate: Also allow students to research working conditions or child labor before the FLSA was passed in 1938 and include this information in their videos or skits.
Academically gifted	Review the Did You Know section on page 160 for the History of FLSA. Research the origins of the act, and write an essay. See http://www.continuetolearn.uiowa.edu/laborctr/child_labor/about/us_history.html .
ELL	Create a graphic organizer with images or video to define premises, liability, and reasonable care. What sort of things in real life help define these terms?

Reinforce and Review

- Guests have a legal right to expect safe food served in a safe environment on safe premises.
- Employees have a legal right to work in a safe environment that is free of hazards.

- Restaurant managers are expected to know about hazards, do whatever is necessary to correct them, and be sure there are proper warnings where everyone can see them.
- Restaurants and foodservice operators must make their premises as safe as possible, but it is impossible to eliminate every possible risk.
- A workplace safety program can raise the overall quality of the guest's dining experience, lower operating costs, and increase profitability.

Discuss

- What are the legal ramifications of accidentally injuring or sickening an employee? How does that differ from accidentally injuring or sickening a guest?
- Why do guests have a legal right to expect safety? Why isn't it "buyer beware"?
- Similarly, if employees don't feel safe in their workplace, why isn't it their responsibility to take a job elsewhere? Aren't they being paid to work under specific conditions?
- Restaurant managers are expected to know about and respond to hazards in a timely manner, but they can't see everything. What if someone is injured due to a workplace situation that employees knew about but had failed to report to management?
- Alternately, what if managers fail to correct a hazard and someone is injured? Leaving aside the legal implications, what will this do to workplace morale?

Vocabulary Review

- **Premises:** All of the property including and around the restaurant.
- **Liability:** The legal responsibility that one person has to another that is enforceable by law in court.
- **Reasonable care:** A legal term that means that an ordinary person would think that the operation takes thoughtful, careful precautions.

PAGES 162–164

OSHA REGULATIONS

Customized Instruction

Learning disabled	Use a graphic organizer or create a poster that defines OSHA and various accidents or near misses that would require an accident investigation. Find images that assist in defining the process. Use www.osha.gov for more information.
Academically gifted	Create a presentation to show the eight steps of accident investigation and how to properly complete OSHA Form 301: Injury and Illness Incident Report.
ELL	Use the information in Figure 9.1, OSHA Job Safety and Health poster, to create examples (as original art, images, or videos) of each bullet point under workers' rights, as well as what employers must do.

Reinforce and Review

- OSHA is responsible for overseeing all workplace health and safety issues in the United States.
- When workplace accidents, injuries, or illnesses occur, forms detailing the incidents must be completed and submitted to OSHA, and investigations may take place.
- Employers are required by law to inform employees of job safety and health protections provided under the Occupational Safety and Health Act of 1970.
- Employers may not post photocopies of the OSHA poster “Job Safety and Health Protection” or versions that are smaller than the original or have been changed in any other way.
- OSHA requires employers to maintain a hazard communication program, through which employees are notified about chemical hazards present on the job and are trained to use chemicals safely.

Discuss

- Are all workplace injuries, accidents, and illnesses documented, as OSHA requires? Ask students to identify situations in which employees or managers might choose not to report an incident. Note: *Don’t give the impression that failing to report is a good idea.*
- The OSHA poster “Job Safety and Health Protection” must be posted—the original, not a photocopy, with no changes either in content or size—in a spot where employees can readily see it upon reporting to work. Is the government placing unnecessary restrictions on owners and managers, or does this regulation protect workers from potentially dangerous management practices? What benefits or disadvantages can students envision if this rule did not exist?
- Why must employers report all workplace-related illnesses and injuries to OSHA? How can this affect employees, either the healthy ones or the ones that are ill or injured?

Vocabulary Review

- **Occupational Safety and Health Administration (OSHA):** The federal agency that creates and enforces safety-related standards and regulations in the workplace.
- **Accident:** An unplanned, undesirable event that can cause property damage, injuries or fatalities, time lost from work, or disruptions of work; accidents are often referred to as incidents or events for risk purposes.
- **Near miss:** An event in which property damage or injury is narrowly avoided; in the workplace, any event that makes guests or employees less safe should be investigated and recorded—even if an actual injury did not occur.
- **Accident investigation:** The act of following up on reported injuries or illnesses involving both guests and employees, which involves eight steps: (1) Record information as soon as possible after the event occurs, ideally within one hour, using OSHA-required forms as well as appropriate corporate or company forms; (2) include a description of the event, the date, and two signatures on accident report forms; (3) collect physical evidence or take pictures at the site of the event; (4) interview all people involved and any witnesses; (5) determine as

clearly as possible the sequence of events, the root causes and effects, and the actions taken; (6) submit reports to OSHA, the insurance carrier, a lawyer, and corporate headquarters, as appropriate, and keep copies of all reports and photographs for your files; (7) keep all employees informed of procedures and hazards that arise from the situation; and (8) if they aren't already available, post emergency phone numbers in public places.

Knowledge Check Answers (Page 164)

1. A liability is the legal responsibility that one person has to another.
2. OSHA Form No. 300 documents a year-long log of occupational injuries and illnesses.
3. The eight steps of an accident investigation:
 - Record information as soon as possible after the event occurs, ideally within one hour. Use OSHA-required forms as well as appropriate corporate or company forms.
 - Include a description of the event, the date, and two signatures on accident report forms.
 - Collect physical evidence or take pictures at the site of the event.
 - Interview all people involved and any witnesses.
 - Determine as clearly as possible the sequence of events, the root causes and effects, and the actions taken.
 - Submit reports to OSHA, the insurance carrier, a lawyer, and corporate headquarters, as appropriate. Keep copies of all reports and photographs for your files.
 - Keep all employees informed of procedures and hazards that arise from the situation.
 - If they aren't already available, post emergency phone numbers in public places.

PAGE 165

HAZARD COMMUNICATION STANDARD

Customized Instruction

Learning disabled	Review a copy of the SDS for the classroom (make copies to distribute). Find and circle the information contained in the sheet, and connect with the items listed in bullet points on page 165. For example, have students circle the Instructions for safe use and handling.
Academically gifted	Write and film a video that describes the contents of the SDS, as listed on page 165. Describe and define the elements with visuals, as if you were training new employees.
ELL	Review the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Match the symbols on the chemicals in the kitchen with the symbols on the SDS. Define what they mean.

Reinforce and Review

- Chemicals can be considered physical hazards, health hazards, or both.
- Health hazards include chemicals that cause injuries or illnesses.
- Physical hazards include chemicals that can cause property damage or immediate injury.
- OSHA requires chemical manufacturers and suppliers to provide a Safety Data Sheet for each hazardous chemical they sell. Employees have the right to see the SDS for any hazardous chemicals they use.

Discuss

- OSHA oversees all use of chemicals in the workplace, from industrial lubricants used in factories to the glass-cleaning spray used in office buildings. How effective do you think OSHA can be, given the huge number of businesses in the United States and the vast number and variety of chemicals in use?
- The SDS for every chemical used at a workplace should be available to employees. Is it realistic to think that employees actually read these documents? Why or why not?
- Ask students to discuss what chemical hazards are present in the classroom and kitchen. How can students protect themselves?
- What should the elements of a hazard communication program be? How should employers train employees on the proper use of chemicals?

PAGES 166–167

THE SAFETY AUDIT

Customized Instruction

Learning disabled	Create a graphic organizer to show how safety program guidelines relate to general safety audits and safety self-inspections. Both the audit and self-inspection fit under the safety program, and branch out underneath.
Academically gifted	Design and create a safety audit checklist that is catered to your school, kitchen, and equipment. Perform an audit, and complete a full report on any findings. Use Figures 9.4 and 9.5 on page 166 as a guide.
ELL	Have students perform a safety self-inspection in the kitchen and classroom area, and mark down findings. Discuss as a group.

Reinforce and Review

- A safety program is designed to meet the specific needs of a business establishment.
- A general safety audit identifies any potentially hazardous areas or practices.
- Regular safety self-inspections can help ensure all employees are maintaining appropriate safety practices.
- The four areas assessed during a general safety audit are facilities, equipment, employee practices, and management practices.
- Video: Safety Audit: This video shows the steps to perform a safety audit.

Discuss

- How can the presence of a safety program empower employees? Alternately, how can it create problems for workers?
- What management practices could affect employee and guest safety?
- There is often a gap between what is taught and what is learned. If a manager has trained an employee on the proper use of a piece of equipment, and the employee makes an error and is injured, whose fault is it? Why?

Vocabulary Review

- **Safety program guidelines:** Guidelines to ensure safety that are based on existing safety practices and the insurance carrier's requirements, and designed to meet the specific needs of the operation, including specific guidelines reflecting the operation's geographic location, such as snow and ice removal, flood water drainage, or earthquake response plans.
- **General safety audit:** A safety inspection of facilities, equipment, employee practices, and management practices designed to judge the level of safety in an operation; a general safety audit identifies any areas or practices that might be hazardous to employees and guests, and the completed audit is presented in checklist form.
- **Facilities:** The building (exterior and interior) and major systems, such as electricity and plumbing, including outside areas (such as drive-through windows, parking lots, and outdoor eating areas) as well as furnishings (such as booths, tables, and chairs) and fixtures (such as sinks, lights, and doors).
- **Equipment:** Items including cooking and cutting equipment, refrigerators, tools, vehicles, fire extinguishers, alarms, etc., that must meet the legal standards for foodservice equipment and be maintained in acceptable working condition as part of a general safety audit.
- **Employee practices:** How employees do their jobs; as part of a general safety audit, managers must train employees in safe practices, including the proper use of work equipment, and then supervise them to make sure they use these practices on the job.
- **Management practices:** How management does its job; as part of a general safety audit, the inspector evaluates how committed management is to protecting employees and guests.

Knowledge Check Answers (Page 167)

1. The Hazard Communication Standard requires all employers to notify their employees about chemical hazards present on the job and train employees to use these materials safely.
2. Physical hazards are chemicals that can cause damage to property and immediate injury. Health hazards are chemicals that cause short- or long-term injuries or illnesses.
3. The purpose of a general safety audit is to judge the level of safety in the operation. It is a safety inspection of facilities, equipment, employee practices, and management practices. A general safety audit identifies any areas or practices that might be hazardous to employees and guests.

Customized Instruction

Learning disabled	Review your school's emergency plan. Do you think everything is included? What changes would you make? Write notes on each part of the plan with your thoughts.
Academically gifted	Design your own emergency plan for the kitchen. What particular areas need to be considered? For example, during a real emergency, any gas lines should be shut off. Research this topic and use the additional kitchen-related emergency precautions to compare and contrast the school's emergency plan. Contact the foodservice director in the school district to provide a sample kitchen emergency plan.
ELL	Use the information listed as the considerations for emergency plans, found in bullet points on page 168, to make a map describing what each item is or does. • Floor plans of the facility, noting first aid stations, alarms, sprinklers, and fire extinguishers • Evacuation routes • Emergency telephone numbers for each type of emergency

Reinforce and Review

- For an emergency plan to work, all employees must understand it before an emergency occurs.
- The main components of a safety plan include installing appropriate fire safety equipment, developing and posting evacuation routes, keeping exit routes clear, and training and drilling employees.
- Praise, gratitude, and awards are all appropriate incentives for encouraging employees to follow good safety practices.

Discuss

- Why is it important to have two separate evacuation routes in any workplace? Why should there be an established meeting place for all employees in the event of a workplace emergency?
- No matter how well employees have been trained on how to behave in case of emergency, most foodservice establishments don't have the opportunity to train their guests on appropriate responses. How can guests be kept calm and orderly during an evacuation?
- What arrangements should be made to assist guests with special needs?

Vocabulary Review

- **Emergency plan:** A plan put in place to protect workers, guests, and property in the case of an emergency or disaster. Emergency plans are specific to each operation, should be posted in highly visible areas, and should include the following elements: floor plans of the facility, noting first aid stations, alarms, sprinklers, and fire extinguishers; evacuation routes; and emergency telephone numbers for each type of emergency.

PAGES 168–170 A POSITIVE WORK ENVIRONMENT
Customized Instruction

Learning disabled	Create a poster to describe the categories of harassment, as listed on page 168. • Race • Color • Age • Religion • Sex (including pregnancy) • National origin • Disability or genetic information Match the types to create a correlation with the definition of harassment: a situation in which slurs or other verbal or physical conduct related to a person's race, gender, gender expression, color, ethnicity, religion, sexual orientation, or disability interferes with the person's work performance or creates an unhealthy work environment. Use pages 168–170.
Academically gifted	Write an action plan on how to create a policy regarding harassment, based on these guidelines: • Emphasize mutual respect for all. • State the values of respect held by the organization. • State that all staff is expected to adhere to the policy. • Define the areas covered by the Civil Rights Act. • Address the covered situations as defined by respective jurisdictions, but also consider expansion based on other types of abuse not covered by civil rights laws. • Alert managers to their responsibility for maintaining a harassment-free environment. • Give employees options for help with dealing with harassment. • Allow for informal resolution if the affected parties choose it. • Indicate the process for handling a complaint. • Indicate that the organization has no tolerance for disrespectful behavior and misconduct, either of which may result in disciplinary action—including termination. Use pages 168–170.
ELL	Create a presentation, poster, or graphic organizer to show what harassment looks like with images or clips of video. Recall the definition: harassment happens when slurs or other verbal or physical conduct related to a person's race, gender, gender expression, color, ethnicity, religion, sexual orientation, or disability interferes with the person's work performance or creates an unhealthy work environment. Use pages 168–170.

Reinforce and Review

- Policies should ensure that any employee who feels that he or she has been harassed is encouraged to voice his or her objection to the offending person and to inform a manager of the situation.
- Policies that encourage communication, such as an open-door policy and anti-retaliation statements, should be enforced.
- All complaints should be investigated in confidence out of respect to all employees.
- Video: Harassment: This video shows some of the types of harassment in the workplace, and how to create a harassment-free environment.

Discuss

- How can the presence of appropriate workplace policies related to diversity, discrimination, and harassment not only help resolve complaints but actually prevent them from arising in the first place?
- Why should investigations of alleged workplace harassment be conducted in confidence? How does this relate to an open-door policy?

Vocabulary Review

- **Harassment:** Situation in which slurs or other verbal or physical conduct related to a person's race, gender, gender expression, color, ethnicity, religion, sexual orientation, or disability interferes with the person's work performance or creates an unhealthy work environment. Harassment covers many categories, including: race, color, age, religion, sex (including pregnancy), national origin, and disability or genetic information.
- **Complainant:** The person with the complaint in a harassment situation.

Knowledge Check (p. 170)

1. Emergency plans are specific to each operation and should be posted in highly visible areas. The following considerations should all be part of your plan:
 - Floor plans of the facility, noting first-aid stations, alarms, sprinklers, and fire extinguishers
 - Evacuation routes
 - Emergency telephone numbers for each type of emergency
 - The main parts of a safety plan are installing fire safety equipment, developing and posting evacuation routes, keeping exit routes clear, and training and drilling employees in their roles during an emergency.
2. Two critical aspects of a positive work environment are respectfulness and equal treatment for all employees. In a harassment-free environment, complaints are handled appropriately and a workplace that is respectful of everyone is supported.
3. Managers are legally liable for maintaining a harassment-free environment so it is critical that managers acknowledge and respond to complaints immediately.

PAGE 171

CASE STUDY FOLLOW-UP ANSWERS: “A SAFE OPERATION”

1. At 15 years old, Tanya’s niece can prepare and serve beverages and use machines appropriate for performing this and other work such as dishwashers, coffee grinders, milkshake blenders, popcorn poppers, and microwaves that do not warm above 140°F (60°C). Fifteen-year-olds can work in food preparation but cannot perform any baking activities, and they can only perform limited cooking duties; they cannot engage in cooking, except with gas or electric grills that do not involve cooking over an open flame and deep-fat fryers that are equipped with and utilize devices that automatically lower and raise the baskets in and out of the hot grease or oil; they may clean kitchen surfaces and non-power-driven kitchen equipment only when temperatures of surfaces do not exceed 100°F (38°C); they can filter, transport, and dispose of oil and grease only if the temperature does not exceed 100°F (38°C); they cannot perform any duties hazardous for 16- to 17-year-olds; they cannot use power-driven food slicers, grinders, choppers, cutters, and bakery-type machines in any capacity; they cannot use automatic broilers, fryolators, rotisseries, or pressure cookers; and they cannot perform work in a freezer or meat cooler.
2. The steps in an accident investigation include: Record information as soon as possible after the event occurs, ideally within one hour; include a description of the event, the date, and two signatures on accident report forms; collect physical evidence or take pictures at the site of the event.

Interview all people involved and any witnesses; determine as clearly as possible the sequence of events, the root causes and effects, and the actions taken; submit reports to OSHA, the insurance carrier, a lawyer, and corporate headquarters, as appropriate; keep all employees informed of procedures and hazards that arise from the situation; and, if they aren’t already available, post emergency phone numbers in public places.

PAGE 172

CHAPTER ACTIVITIES ANSWERS

- **Say No to Harassment:** Student answers will vary. See what examples students can come up with—not necessarily from their own experience. Use pages 168–170. Students should emphasize that everyone has the responsibility to prevent harassment.
- **Chemical Interactions:** Student answers will vary; however, DO NOT ALLOW STUDENTS TO PHYSICALLY USE CHEMICALS. Reference the SDS to discuss the various interactions as a class discussion. Refer to Table 9.2 on page 165 for some common foodservice-related chemicals, if necessary.
- **Can I Use That Machine?:** Student answers will vary based on state regulations. However, according to the FLSA details in Table 9.1 on page 161, the answers would be:
 1. 14 years old (the current year minus 14)
 2. 16 years old (the current year minus 16)
 3. 16 years old (the current year minus 16)
 4. 14 years old (the current year minus 14)

- **Emergency Plans:** Students should include a floor plan and emergency telephone numbers in their emergency plans. Refer to page 168.
- **Take Care of Your Staff:** Student answers will vary. The website www.osha.gov may be helpful. Chunk the activity into groups to customize, assigning one topic to each group. Encourage students to look for sample training programs online.
- **Youth and the Law:** Student answers will vary, but they should discuss some of the specific exclusions and inclusions based on age from the FLSA guidelines in Table 9.1. If they think age guidelines are arbitrary in certain cases, they should be able to explain why and/or propose an alternative method of deciding what tasks young employees can and cannot safely perform.

PAGE 173		EXAM PREP ANSWERS	
1. B (p. 162)		5. A (p. 162)	8. C (p. 168)
2. A (p. 166)		6. A (p. 168)	9. B (p. 170)
3. A (p. 160)		7. C (p. 160)	10. A (p. 170)
4. C (p. 165)			

Chapter 10

Teacher's Companion

CHAPTER OVERVIEW

This chapter goes into great detail about workplace hazards, including burns, falls, and cuts. It also addresses appropriate first aid measures and describes potential external threats.

CHAPTER OBJECTIVES

- 10.1 Describe various types of protective clothing, footwear, and equipment used in a foodservice setting.
- 10.2 Identify hazards that contribute to accidental fires.
- 10.3 Classify various types of fires and fire extinguishers.
- 10.4 Outline the actions to take in the event of a fire in a foodservice setting.
- 10.5 Identify procedures for preventing burns.
- 10.6 Identify procedures for preventing slips, trips, and falls in a foodservice operation.
- 10.7 Outline the procedure for cleaning up spills on floors.
- 10.8 Demonstrate how to use ladders safely.
- 10.9 Demonstrate proper lifting and carrying procedures to avoid injury.
- 10.10 Outline basic first aid concepts and procedures.
- 10.11 Identify external threats to an operation, and list ways to protect against them.

ADVANCE PREPARATION

Review	- Chapter 10, pages 174–195 - Unit case study, “A Safe Operation,” pages 98–99
Contact	- Local fire department to request a guest speaker - The school nurse or another health-care professional - The local branch of the American Red Cross
Prepare	- Photographs of first-, second-, and third-degree burns - Research the science behind how fuel, oxygen, and heat combine to create fire, and the knowledge of the chemical reactions to extinguish common kitchen fires. The National Fire Protection Agency website may be useful: http://www.nfpa.org/public-education.

CHAPTER BREAKDOWN

PAGE 176

INTRODUCTION

Discuss

- Personal protective equipment protects employees from potential hazards on the job.
- Fire awareness is one of the most important concepts in the restaurant and foodservice industry due to the great potential for burns and fires. Encourage students to point out fire awareness tips.

PAGES 176–177

PERSONAL PROTECTIVE EQUIPMENT

Customized Instruction

Learning disabled	Create a video or skit that shows clothes that can increase risk for injury (the “don’ts”), and items like PPE or other specialized clothing and gear that protect against injury (the “dos”). Use the bullet points on page 176 to guide the activity.
Academically gifted	Using the safety plan designed in chapter 9, create an inventory of all PPE items needed in the kitchen and how employees would use those items, meaning what hazard can be avoided with proper PPE use. Make another list of items that are needed. Search online to shop for items, and create a spreadsheet that lists where the item can be bought, how much the item is, and the quantity of the items needed. Put your findings in a short report, along with the spreadsheets.
ELL	Find images to describe what PPE is and what specialized clothing and gear is needed to protect against injury. Use the second set of bullet points on page 176 and the information on heat-resistant PPE, goggles, and shoes on page 177 to find images or actual items from the kitchen that describe and define the textual descriptions.

Reinforce and Review

- Well-designed footwear helps prevent employees from slipping, tripping, or falling and protects their feet from falling objects or dangerous spills.
- All mitts, gloves, and towels should be kept dry to prevent steam from causing injury.
- Protective clothing and equipment should be regularly checked for damage and wear.

Discuss

- Supplying good-quality equipment, including personal protective equipment, demonstrates a management's commitment to employee safety and well-being. What other management practices reinforce that commitment? Are there ways management practices can show a lack of concern toward employees?
- Employees should never wear disposable gloves when handling hot items to prevent burns. But employees should also keep bandages covered. How can an employee with a hand injury maintain his or her own safety as well as protect the food?
- What are some other ways that food safety and employee safety may appear to come into conflict? How can these situations be resolved?
- If employees choose not to use available and appropriate personal protective equipment and are injured, who is at fault? Why might an employee choose not to follow an established safety practice, especially when working in a potentially hazardous situation?

PAGES 178–184
FIRE HAZARDS

Customized Instruction

Learning disabled	Create a poster or graphic organizer to match the classes of fires with the appropriate extinguishers for each. Use images to describe each bullet point in Table 10.1 on page 179. Create a poster or graphic organizer to answer the question “Should you fight a fire?” Use the bullet points and numbered list on page 182.
Academically gifted	Create training documents that summarize the information presented on fire hazards, pages 178–184. Design the format (song, video, PowerPoint) for the presentation as if you were training your own employees. Present to the class.
ELL	Create a poster or video to show how to use a fire extinguisher, using pages 180–181 for reference. Create a poster or video to show the six main processes that help prevent burns. Use the information on pages 183–184.

Reinforce and Review

- There are four important aspects to fire safety: prevention, detection, extinguishing, and training.
- One-third of all restaurant fires result from faulty electrical wiring and equipment or from improper use of equipment.
- Employees can take a number of precautions to prevent fires, such as regularly cleaning ranges, hoods, and ventilation systems.
- Keep all flammable items and materials away from heat sources.
- Different types of fires require different types of fire extinguishers. Using the incorrect type of extinguisher can create a greater hazard.
- The four steps to putting out a fire are: remove its fuel supply, eliminate its oxygen supply, cool the burning fuel below its combustion point, and use a dry chemical extinguisher.
- Handheld portable fire extinguishers can be successfully used to combat small fires if used properly.
- All employees should be trained on the proper use of fire extinguishers and should know where each fire extinguisher in the facility is located.
- In the foodservice industry, most burns are caused by heat. Burns are classified as first, second, or third degree, depending upon severity.
- Essential Skills: Steps for Avoiding Burns lists the 10 steps for avoiding burns.

Discuss

- Is there any way to make the work of the foodservice industry absolutely risk-free?
- Are there any potential fire hazards in the classroom? How can they be prevented?
- Why might a foodservice establishment choose to have all four types of extinguishers on hand?
- Is it ever safe to fight a fire by yourself?
- What safety processes can help prevent burns?

Vocabulary Review

- **Class A fires:** Fires involving wood, paper, cloth, cardboard, rubber, and many plastics and that typically happen in dry-storage areas, dining areas, garbage areas, and restrooms.
- **Class B fires:** Fires that involve flammable liquids such as oils and grease and usually start in kitchens and maintenance areas.
- **Class C fires:** Fires that involve live electrical equipment and that can occur in motors, switches, cords, circuits, and wiring.
- **Class K fires:** Kitchen fires involving cooking oils and fats, such as in a deep-fat fryer.
- **Automatic systems:** Systems that respond to a fire and operate even when no one is in the facility, such as automatic sprinklers, which provide an early and effective response to fire.

- **Smoke detectors:** Devices that detect smoke to warn of a fire; smoke detectors require a flow of air in order to work well.
- **Heat detectors:** Devices that detect fires when activated by the significant increase of temperature associated with fire; they work where there is no smoke.
- **Flame detectors:** Devices that react to the movement of flames to detect a fire.

Knowledge Check Answers (Page 182)

1. Employees must avoid clothes that can increase their risk for injuries, such as:
 - Loose or baggy shirts that can get caught on machinery, catch on fire, or interfere with lifting
 - Jewelry, especially necklaces and bracelets, that can get caught in machinery
 - Scarves or neckties that can get caught in machinery or catch on fire
2. Prevent grease fires by scheduling regular cleaning for walls and work surfaces; ranges, fryers, broilers, and microwave and convection ovens; heating, air-conditioning, and ventilation units; and hoods and filters. Use a professional company specializing in cleaning equipment. (For maximum safety, hoods and ducts are best serviced by a qualified professional every six months.) Figure 10.3 shows a hood ventilation system.
3. Class A (ordinary combustibles): Includes wood, paper, cloth, and cardboard. Most often occur in food storage rooms, dining areas, restrooms, and garbage storage areas. Type A or A/B/C extinguishers may be used on a class A fire. Examples: Fire in trash can, cigarette igniting a tablecloth, plastic container that comes in contact with a range burner or hot griddle.

Class B (flammable liquids): Includes flammable liquids, gases, grease, oil, shortening, pressurized cans. May occur in kitchens (deep-fat fryers) and maintenance areas. Only B/C extinguishers containing the dry chemicals sodium bicarbonate or potassium bicarbonate should be used on deep-fat fryer fires. If a class B fire does not occur in a deep-fat fryer, any A/B or B/C extinguisher can be used. Examples: Flames from a grill igniting grease deposits on a hood filter in the kitchen; aerosol cans stored near a heat source exploding.

Class C (electrical equipment): Includes live electrical equipment, cords, circuits, motors, switches, wiring. Only those B/C and A/B/C extinguishers containing nonconductive materials, such as carbon dioxide, should be used on electrical fires. Examples: Fire in a toaster; frayed cord igniting while a machine is operating; fire in the motor of a grinder.

4. **Smoke detectors:** Devices that detect smoke to warn of a fire; smoke detectors require a flow of air in order to work well.

Heat detectors: Devices that detect fires when activated by the significant increase of temperature associated with fire; they work where there is no smoke.

Flame detectors: Devices that react to the movement of flames to detect a fire.

In addition to these, many operations have automatic systems that respond to a fire and operate even when no one is in the facility, such as automatic sprinklers, which provide an early and effective response to fire.

Knowledge Check Answers (Page 185)

1. Spills need to be cleaned up immediately. Verbally warn employees and guests, block the area, and direct people around the spill.
2. The best way to protect guests and employees against falling or any other injury is to anticipate what might happen.

Homework Activity: Math

Costs and Benefits

How much money does a fire cost you? Look at the website for the National Fire Protection Association, and research the costs inflicted from a fire.

Make a chart illustrating how much fires cost the industry annually. Next, research how much the foodservice industry spends annually on insurance, security, and other precautions to protect against fires. Make a chart of these costs as well. Compare your two charts. If you were a restaurant owner, where would you spend your money so that it would have the greatest impact?

Homework Activity: Science

Types of Extinguishers

Each classification of fire extinguisher is intended for use on a different type of fire. What are the different types of extinguishers and what are they used for?

How does that specific chemical or combination of chemicals work to extinguish a particular type of fire? What are the other major uses for these chemicals? What might happen if the wrong extinguisher is used on a particular fire? Write a one-page essay on your research, focusing on the reactions of the fire and the extinguisher.

In-Class Activity: Literacy

Designing Logos

Table 10.1 on page 179 depicts logos associated with each class of fire extinguisher—A, B, C, and K. Working in groups of three or four, design new logos that you think accurately illustrate the appropriate use for each type of fire extinguisher.

Create a poster showing your proposals and present them to the class. After all the presentations have been completed, the class should vote on which logos are the best and why.

In-Class Activity: Writing

Remembering Safety Information

“PASS” is the acronym used to remember the four steps in properly using a portable fire extinguisher. Such mnemonics, or memory devices, help people retain information. Another common example is “Stop, Drop, and Roll,” which is used to remind people of the steps to take to extinguish fire on their hair or clothing. Write skits or make a short video to show what PASS means, and demonstrate the steps.

Homework Activity: Writing

Grease Fires

Research how grease and grease buildup are related to fires in the foodservice industry. Why do grease fires occur, and how can they be prevented? How much damage do grease fires cause annually? How much can it cost to clean up after a fire (including any loss of business due to temporary closure)? Write a one-page essay describing your findings.

PAGES 185–191
PREVENTING SLIPS, TRIPS, AND FALLS

Customized Instruction

Learning disabled	Perform an audit of the kitchen and surrounding buildings. Describe which areas are and are not safeguarded against hazards. Use Table 10.5 on page 185 to guide your inspection.
Academically gifted	Investigate the information about first aid on pages 189–191. If possible, take a course in first aid and CPR. What are the most important things to know and understand about common injuries, for someone who is not trained? What other emergency training is related to this topic? Perform research and organize the information in a short presentation.
ELL	Create posters to show how to use ladders safely using the bullet points on pages 186–187. Repeat the activity with how to lift and carry safely, using the bullet points on page 187 and the Essential Skills feature on page 188.

Reinforce and Review

- Most common slips, trips, and falls occur on steps, floors, and pavement.
- The best way to protect guests and employees against falling—or against any other potential injury—is to anticipate what might happen. Performing routine maintenance of the facility’s entire physical plant is an important way to protect against employee or guest injury.
- The presence of grease or oil on floors is a major cause of injury, so care should be taken to maintain clean floors. All spills, especially of grease or oil, should be promptly cleaned.

- Employees should always use a ladder or step stool to reach items stored above shoulder level.
- Performing warm-up exercises before beginning a shift or before lifting and carrying items may help employees protect themselves from injury. Heavy loads should be stored at waist level. If an item is particularly heavy, it should be labeled accordingly.
- Effective first-aid treatment includes treating a person's physical and emotional needs.
- Generally, employees should not attempt to administer first aid to another person unless they have been trained to do so. If employees must render service in an emergency situation, they should tell health-care professionals exactly what aid they have performed.
- Video: Preventing Slips, Trips, and Falls: This animation shows the information listed in Table 10.5 to safeguard the operation and to prevent slips, trips, and falls.
- Video: Steps to Safe Lifting and Carrying: This animation shows the steps to safe lifting and carrying, as detailed in the Essential Skills feature on page 188.
- Video: First Aid for Common Minor Injuries: This animation shows the different methods for applying first aid to common minor injuries, according to the information in Table 10.6 on page 190.

Discuss

- Why might employees and guests become distracted and fail to observe good safety practices?
- Some of the safety guidelines described in this chapter, such as involving two staff members to handle grease spills or use ladders, may appear impractical for smaller or particularly busy operations. What is more important, guest service or employee safety? Do student answers to this question vary depending on circumstances?
- Back injuries are common among foodservice employees. Safe lifting and carrying practices might eliminate many of these injuries, if observed. Why, then, do so many injuries still occur?
- Encourage students to discuss each kitchen safety tip and why each is important. How can following these safety tips save money as well as protect employees?
- Sometimes employees are injured on the job. Is it more important to get the job done, or to take care of an injury? Does this depend on the situation? When an employee chooses one response or another, how might an employer or manager react?
- What costs are involved in providing a safe working and dining environment? Is there such a thing as being too safe? How can managers and owners develop a balance between safety and efficiency?

Vocabulary Review

- **First aid:** Medical treatment given to an injured person either for light injuries or until more complete treatment can be provided by emergency service or other health-care providers.
- **Cardiopulmonary resuscitation (CPR):** Medical procedure that restores breathing and heartbeat to injured persons who show no signs of breathing or pulse.

- **Heimlich maneuver:** Medical procedure that removes food or other obstacles from the airway of a choking person. Some states require either employee training in the Heimlich maneuver or posters to be displayed in the restaurant to describe the steps of the procedure.

Knowledge Check Answers (Page 188)

1. A straight ladder should reach three feet above the spot where the top of the ladder rests against the support. Stepladders and step stools should be tall enough so that an employee will not have to stand on the top step or reach above his or her shoulders to place an item on a rack or shelf.
2. Establish solid footing. Check the conditions of the floor. Stand close to the item, with feet shoulder width apart. Put one foot slightly in front of the other. Align the body. Stand straight. Face the item. Bend at the knees—not at the waist—and lower the body with the leg muscles to reach the item. Make the lift. Grip the item with the whole hand, not just the fingers. Keep the wrists as straight as possible. Tighten the stomach muscles and align the back. Arch the lower back by pulling the shoulders back and sticking out the chest. When getting something off a lower rack, set the grip and check the weight before pulling the item off the rack. Transfer the weight immediately to the legs. Lift with the legs taking the weight. Smoothly and slowly take the item up. Do not twist while standing up. If the item is too heavy, slowly bend the knees and carefully set it down on the floor. Set down the item. Keep the lower back pulled in by tightening the stomach muscles. Keep the weight of the item on the legs. Bend at the knees and smoothly go down. Set down a corner of the item, slide the hand out from under it, and settle the rest of the item.

In-Class Activity: Physical

Lifting and Carrying

Review the Essential Skills feature on page 188 on safe lifting and carrying practices with the class and review the video. Have students demonstrate safe lifting and carrying practices using different-size empty boxes. Correct any student who is not exhibiting safe lifting and carrying practices.

In-Class Activity: Math

Heavy Lifting

Mike is a new storeroom employee at a small grocery. He works a 40-hour week in his full-time position.

Company policies restrict the amount of weight that people can carry at once: 30 pounds for a single individual, 60 pounds for two-person lifting. On a typical day, Mike moves 88 boxes that weigh an average of 26 pounds apiece and team carries another 20 loads that weigh an average of 62 pounds apiece. By the end of the day, how much has Mike carried?

If this is a typical day, how much does he carry in a typical five-day week? How much will he carry in a typical year, minus two weeks of vacation and holidays?

Homework Activity: Writing

Muscle Power

Lifting objects, often heavy ones, is a common task in the foodservice industry. What are the biomechanics of lifting? What muscles are involved, and in what order? How does muscle force work to combat gravity? What role does muscle fatigue play? Write a one-page essay describing your research.

In-Class Activity: Literacy

First-Aid Techniques

Working in small groups, create a computer slide show illustrating a first-aid technique of your choice. The slide show should contain at least five distinct visuals, describing the problem and how and by whom it should be addressed.

Present your work to the class.

PAGE 192

EXTERNAL THREATS

Customized Instruction

Learning disabled	Review the emergency plan for your school, and the plan you developed for a previous assignment. What plans are in place for an external threat? Create a list of events that could be considered an external threat.
Academically gifted	Research food defense programs and discover what programs exist to protect against purposeful food contamination and tampering. Present your ideas in a short essay.
ELL	Find images or clips of video that describe external threats. What things can help during an external threat? Answer these questions with found images.

Reinforce and Review

- Back doors should be kept locked and alarmed at all times to reduce or eliminate the risk of theft or other intruders.

Discuss

- Is there such a thing as being too safe? How can managers and owners develop a balance between safety and efficiency?

Vocabulary Review

- **Arson:** The deliberate and malicious burning of property, which is a serious crime.

Knowledge Check Answers (Page 192)

1. First aid is the medical treatment given to an injured person.
2. CPR restores breathing and heartbeat to injured people. Heimlich maneuver attempts to remove obstacles from a choking person's airway. Only those who have been trained in CPR and the Heimlich maneuver should perform them.
3. Lock and alarm back doors at all times to prevent the occurrence of pilferage and to reduce the risk of robbery.

PAGE 194

CASE STUDY FOLLOW-UP ANSWERS: "A SAFE OPERATION"

1. Class A fires consist of ordinary combustibles such as wood, paper, or trash. Water works best on class A fires. Class B fires are fueled by flammable and combustible liquids such as oil and gasoline. Class C fires are energized electrical fires. Class K fires involve oils and grease.
2. For a third-degree burn, cover the burn with cool, moist, sterile gauze. Do not apply appointment, a cold compress, or cold water. Do not remove burned clothing. Seek medical attention immediately.

PAGE 194

CHAPTER ACTIVITIES ANSWERS

- **First Aid:** Students may suggest a variety of items to be included in a first aid kit for employees or for guests. The employee kit should include various sizes of bandages, antibiotic creams, burn gels or sprays, gauze, surgical tape, gloves, tweezers, cold packs, antacids, pain-relieving tablets, and scissors. The guest kit should include these items as well as items specifically intended to treat children: bandages depicting cartoon characters, child-safe pain relievers and other medications, and lollipops might all be included.
- **Fire Is a Chemical Reaction:** Student answers will vary but should include information about what fire needs to keep burning, including fuel and oxygen, as well as what professional firefighters worry about when combating fire. Students can consult the National Fire Protection Association website: <http://www.nfpa.org/public-education>.
- **Safety Numbers:** Student answers will vary depending on the local fire code. Some fire codes might only require one ABC extinguisher for space that size, but a commercial kitchen should have a class K extinguisher, necessary to fight grease fires.
- **Fire Codes All Over:** Student answers will vary, as in the previous activity. Any operation should include at least one general ABC extinguisher, and a commercial kitchen should have a class K extinguisher for grease fires.
- **Safe Workplaces:** Student answers will vary. Answers should include using the proper chain of command, polite corrective actions, and proper training to prevent unsafe behaviors.
- **The Best Storeroom Ever:** Student answers will vary. Consideration should be given for the most likely path workers would take in order to ensure the safe use of ladders and safe carrying in regard to doors and worker movement.

PAGE 195**EXAM PREP ANSWERS**

1. D (p. 191)

2. D (p. 178)

3. D (p. 178)

4. C (p. 184)

5. A (p. 181)

6. C (p. 181)

7. A (p. 185)

8. C (p. 186)

9. C (p. 183)

10. C (p. 187)

Chapter 11

Teacher's Companion

CHAPTER OVERVIEW

This chapter describes a wide variety of equipment used in the professional kitchen, including receiving and storage equipment as well as items used to prepare, cook, and serve food.

CHAPTER OBJECTIVES

- 11.1 Identify the equipment needed for receiving and storing food and supplies.
- 11.2 List the different types of food-preparation equipment, and give examples of their uses.
- 11.3 Demonstrate correct and safe use of food-preparation equipment (e.g., slicers, mixers, etc.).
- 11.4 Identify the kitchen equipment needed for holding and serving food and beverages.

ADVANCE PREPARATION

Review	- Chapter 11, pages 200–219 - Unit case study, “Introduction to the Kitchen,” pages 198–199
Contact	- Foodservice director for school district to tour the facilities to review equipment used for receiving, storage, preparation, holding, and heating food and beverages - Commercial foodservice equipment sales representative (foodservice director may be able to connect you to a representative)
Prepare	- Photographs and signs of all foodservice equipment—label items that are physically available, and use labeled photos for those key terms that are not available. Look for video clips of items in use. Understand how the different items are grouped into five main categories: receiving food, storing food, preparing food, holding food, and serving food (and beverages) - Instructions or manuals for all pieces of equipment, including operation and maintenance

CHAPTER BREAKDOWN

PAGE 202

INTRODUCTION

Discuss

- Review the importance of using the right tool for the job.
- Introduce students to the equipment commonly found in the professional kitchen.
- Equipment and tools are divided into categories according to their function—to receive, store, prepare, hold, or serve food.

PAGE 202

RECEIVING FOOD

Customized Instruction

Learning disabled	Create a graphic organizer that divides equipment according to function—receiving food, storing food, preparing food, holding food, and serving food (and beverages). Use the tool throughout the chapter to add key terms, definitions, and photographs. Begin with receiving equipment and build through each section and match equipment with function. Also: Have students search online to find the pricing of various equipment defined throughout.
Academically gifted	Create a manual for the classroom and kitchen with all equipment available. Fill a binder with the proper manual or directions for use, maintenance schedule, cleaning schedule, and any other HAZCOM related materials—including what chemicals or PPE are required for use. Make sections for each category according to function—receiving food, storing food, preparing food, holding food, and serving food (and beverages). Build the binder throughout the chapter, and present at the end.
ELL	Find videos of workers using receiving tables/areas, scales, or utility carts to receive deliveries. Model the behavior in a video or skit demonstrating proper use.

Reinforce and Review

- The receiving area is the first stop in the flow of food, and therefore the first opportunity an establishment has to check the quality of the goods it has ordered.
- Using a scale to double-check an item's weight, even if the weight is listed on the box, is one way to reduce mistakes in ordering and receiving.

Discuss

- The classroom kitchen is different in some ways from a professional kitchen. In particular, the equipment used may vary. Ask students to identify equipment that might be present in the school cafeteria or in a restaurant kitchen that is not available (either at all or in the same dimensions) in the classroom kitchen. Encourage them to explain these differences.
- Why is the receiving process so important in the scheme of the kitchen?

Vocabulary Review

- **Receiving table/area:** Place in a foodservice operation where employees weigh, inspect, and check delivered items.
- **Scales:** Equipment in the receiving area that employees use to weigh items in order to confirm that what was ordered matches what is delivered.
- **Utility carts:** Wheeled equipment used in the receiving area made of durable injection molding (plastic), molded shelving, or heavy steel and used to carry food cases to storage areas.

In-Class Activity: Physical

Receiving Food

Have students role-play that they are receiving a delivery and need to inspect and weigh the food before they accept the delivery.

In-Class Activity: Math

Coffee's On

If you need to make 60 cups of coffee, how many cups of ground coffee do you need to brew? Use the formula 1½ tablespoons for one cup of coffee.

PAGE 203

STORING FOOD

Customized Instruction

Learning disabled	Create a graphic organizer that divides equipment according to function—receiving food, storing food, preparing food, holding food, and serving food (and beverages). Use the tool throughout the chapter to add key terms, definitions, and photographs. For storing equipment, focus on shelving, a walk-in refrigerator, a walk-in freezer, a reach-in refrigerator, and a reach-in freezer to store food.
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(continued)

Academically gifted	Create a manual for the classroom and kitchen with all equipment available. Fill a binder with the proper manual or directions for use, maintenance schedule, cleaning schedule, and any other HAZCOM related materials—including what chemicals or PPE are required for use. Make sections for each category according to function—receiving food, storing food, preparing food, holding food, and serving food (and beverages). Build the binder throughout the chapter, and present at the end.
ELL	Find videos of workers using shelving, a walk-in refrigerator, a walk-in freezer, a reach-in refrigerator, and a reach-in freezer to store food. Model the behavior in a video or skit demonstrating proper use.

Reinforce and Review

- Food should be stored appropriately as soon as possible after receiving it.
- All refrigerators must maintain temperatures between 32°F and 41°F (0°C and 5°C), and all freezers must maintain a temperature of 0°F (–18°C).

Discuss

- Encourage students to explain the role of proper storage. How does it keep food safe? How does it improve efficiency?

Vocabulary Review

- **Shelving:** Equipment used to store dry goods; operations use stainless-steel shelves because they are very strong and easy to clean.
- **Refrigerators (walk-in and reach-in):** Equipment used to maintain food temperatures between 32°F and 41°F (0°C and 5°C). A walk-in refrigerator (often just called a “walk-in”) is built into the foodservice facility itself, whereas a reach-in refrigerator (often just called a “reach-in”) can have one, two, or three internal compartments. A reach-in might have full-sized doors or half doors, windows in the doors, or doors on both sides. Some have wheels so that they can be used in different areas of the kitchen. There are also roll-in, display, on-site, and portable refrigerators.
- **Freezers (walk-in and reach-in):** Equipment used to maintain food temperatures of 0°F (–18°C) or lower. A walk-in freezer (often just called a “walk-in”) is built into the foodservice facility itself, whereas a reach-in freezer (often just called a “reach-in”) can have one, two, or three internal compartments. A reach-in might have full-sized doors or half doors, windows in the doors, or doors on both sides. Some have wheels so that they can be used in different areas of the kitchen. There are also roll-in, display, on-site, and portable freezers.

Knowledge Check Answers (Page 203)

1. A walk-in refrigerator or walk-in freezer is built right into the foodservice facility itself. A reach-in refrigerator or reach-in freezer can have one, two, or three internal compartments.
2. Stainless-steel shelves are very strong and easy to clean—plastic shelves are not as strong and can crack. Refer to the Industry sidebar on page 203, and review state or local regulations for commercial equipment.

PAGES 204–213 FOOD-PREPARATION EQUIPMENT**Reinforce and Review**

- Food-preparation equipment involves such important items as cutting and mixing equipment and cooking appliances, such as ranges and ovens.
- Always be extremely careful when using cutting and mixing machines, which can be extremely dangerous. In fact, minors are not permitted to use these devices in the workplace.
- Cutting and mixing equipment is used to slice, chop, or purée ingredients and to whip or beat mixtures.
- Immersion blenders and countertop blenders essentially perform the same function, although one uses a self-contained vessel and the other is simply a mixing blade with a handle and motor.
- Steaming food is a very efficient cooking method, as well as a nutritious one. Unlike many other cooking techniques, it requires no fat to produce a flavorful product.
- Since steamers cook food at 212°F (100°C), the temperature at which water boils to become steam, care must be taken when uncovering the food to avoid a serious burn.
- Steam-jacketed kettles can hold up to 100 gallons, making them ideal for large batches of stocks or soups. Some models tilt or have spigots to facilitate the removal of the finished product.
- Broilers use very intense heat to cook food from above. Grills—including charbroilers—cook food from below.
- Salamanders are a popular equipment choice in a variety of foodservice establishments. Despite their small size, they are very efficient and can be used to finish dishes or even heat plates.
- Ranges are the most commonly used cooking appliances in the professional kitchen. Pots and pans are placed over open flames or heated metal plates or coils.
- Ranges are available with a number of different cooking surfaces, including open burners, flat-top burners, griddles, and ring-top burners.
- Induction burners work by means of magnetic attraction. The cooking vessel and the food inside it heat, but the cooking surface itself remains cool.
- Conventional ovens, as the name implies, are the most common ovens in most foodservice establishments. Although they have certain limitations, they are flexible and efficient.
- All relevant safety precautions should always be taken when working with large kitchen equipment.
- Electrical equipment should always be turned off and unplugged before cleaning or otherwise maintaining it.
- Any malfunctions should be promptly reported to managers and coworkers.

Discuss

- Minors aren't allowed to use certain pieces of equipment in the professional kitchen. However, the work still needs to get done. How can students perform the following tasks without using prohibited machinery?
 - Whipping egg whites
 - Slicing bread
 - Puréeing cooked vegetables
- Encourage students to discuss the similarities and differences among the ovens. Which might be better options for some foodservice operations than others?

Vocabulary Review

- **Cutters:** Machines used in a professional kitchen to cut meats, vegetables, and other food.
- **Mixers:** Machines used in a professional kitchen to mix and blend sauces and batters.
- **Steamers:** Machines used in a professional kitchen to cook vegetables and grains by allowing the food to come into direct contact with steam, heating the food very quickly.
- **Broilers:** Machines used in restaurant and foodservice operations to cook food quickly with very intense direct heat; the heat source is above or both above and below to heat the food.
- **Ranges:** Cooking units with open heat sources that are usually the most frequently utilized pieces of equipment in restaurant and foodservice kitchens.
- **Ovens:** Kitchen equipment in restaurant and foodservice operations used for baking, heating, or roasting food.
- **Proofing cabinet:** Piece of kitchen equipment designed to proof bread and keep it hot after it is baked, allowing for control of the temperature and humidity of doughs during both the proofing and second rise, to make a consistent product.

Knowledge Check Answers (Page 212)

1. Types of cutters and mixers include countertop blender, food processor, food chopper, horizontal cutter mixer, immersion blender, mandolin, meat grinder, and meat slicer.
2. Safety guidelines for large preparation equipment include:
 - Learn to use the machines safely by getting proper instruction and reading the manufacturer's instructions.
 - Use all safety features—make sure that lids are secure, use hand guards, and make sure machines are stable.
 - Turn off and unplug electrical equipment completely after each use.
 - Check to ensure that the equipment is unplugged before disassembly. Clean and sanitize the equipment thoroughly after each use.
 - Reassemble all pieces of equipment properly, and leave machines unplugged after each use.
 - Report any problems or malfunctions promptly, and alert coworkers to the problem.

Homework Activity: Science

Under Pressure

Pressure plays an important role in the steaming process. But how does it work? Research the relationship between pressure and steam, paying special attention to cooking processes. Discuss your findings in a one-page paper.

Homework Activity: Science

Induced?

Induction burners use magnetic attraction between the cooking surface and the cooking vessel to create heat. Research this process. How does magnetic attraction create heat? What types of cooking vessels are appropriate for use with induction burners? Will the cooking vessel still be hot after it is removed from the cooking surface? Discuss your findings in a one-page paper.

Homework Activity: Writing

Let's Get Mixing

Select one of the mixers found on pages 204–206. Write a one-page essay describing the mixer and its uses.

PAGES 214–216 | HOLDING AND SERVING EQUIPMENT

Customized Instruction

Learning disabled	Create a graphic organizer that divides equipment according to function—receiving food, storing food, preparing food, holding food, and serving food (and beverages). Use the tool throughout the chapter to add key terms, definitions, and photographs. Focus on all of the various pieces of holding and serving equipment.
Academically gifted	Create a manual for the classroom and kitchen with all equipment available. Fill a binder with the proper manual or directions for use, maintenance schedule, cleaning schedule, and any other HAZCOM related materials—including what chemicals or PPE are required for use. Make sections for each category according to function—receiving food, storing food, preparing food, holding food, and serving food (and beverages). Build the binder throughout the chapter, and present at the end.
ELL	Find videos of workers using all featured pieces of equipment to hold and serve food. Model the behavior in a video or skit demonstrating proper use.

Reinforce and Review

- Hot-holding cabinets and hot boxes keep containers of prepared food hot, often for use in banquets or catering operations.
- Steam tables differ from bain-maries in that they are only used with hotel pans as inserts and they may not require hot water to keep food warm.

Discuss

- How can the appropriate use of holding and serving equipment improve a guest's experience? Likewise, how can inappropriate use worsen the experience?
- Which holding and serving equipment might be more or less suited to particular types of foodservice establishments? For instance, buffet-style equipment like chafing dishes might be found in a country club but not in a quick-service restaurant.
- How can the use of holding and service equipment facilitate a kitchen's prep work?

Knowledge Check Answers (Page 216)

1. A bain-marie is a cylindrical stainless-steel pot meant to sit in a steam table.
2. Speed racks are generally made of metal and have slots that food handlers can slide sheet pans into. This can create shelves of various heights depending on need. Speed racks, equipped with wheels, are suitable for kitchens, bakeshops, dry storage, refrigerators, and freezers.

Homework Activity: Literacy

Equipment Purchasing

What types of preparation, cooking, and serving equipment do you have at your home? If you were to purchase preparation, cooking, and serving equipment for your home, what types would you want? Write a one-page essay on these topics.

PAGE 217

CASE STUDY FOLLOW-UP ANSWERS: "INTRODUCTION TO THE KITCHEN"

1. Kitchen staff should know how each piece of equipment works, how to properly clean it, and how to perform periodic maintenance. To preserve equipment longevity, Abby should show common sense. For instance, refrigeration equipment relies on airflow to remove heat. Abby should not stack boxes so close that it could cut off air circulation, causing the compressor to work harder. Likewise, she should turn off equipment not in use.
2. Abby, like all culinary professionals, should know and understand the equipment used in the kitchen. For one thing, an emergency or sickness might require her to wash dishes or repair equipment. For another, if Abby comes to own her own establishment, she will need to know how to care for and maintain the equipment.

PAGE 218

CHAPTER ACTIVITIES ANSWERS

- **Brrrrr...It's Cold!:** Student answers will vary. They should consider the size and output of the machine in relation to the size and needs of the operation. Consideration could also be given to efficiency versus price of various ice machines.
- **What Heats the Best?** Conduction is the transfer of heat from one item to another through direct contact between the items. Convection is the transfer of heat from one area to another. Radiation is the transfer of energy through space, often by microwaves or infrared heat.
- **Lots of Coffee:** You would need 60 tablespoons or 3.75 cups of ground coffee.
- **A Kitchen Production Plan:** Student answers will vary. Students can search online for "commercial kitchen layout" to get some ideas for how a commercial kitchen can be arranged. Then they should arrange their kitchen production and labeling based on the menu they chose.
- **Selling Commercial Restaurant Equipment:** Student answers will vary. Students can search online for advertised jobs for "restaurant equipment sales representative" and similar keywords. Direct them to a few reputable job sites.
- **It Can Only Be One:** Student answers will vary. Students should choose a piece of equipment that would at least allow them to make a limited menu of items.

PAGE 219

EXAM PREP ANSWERS

- | | | |
|---------------|---------------|----------------|
| 1. B (p. 205) | 5. D (p. 210) | 8. B (p. 212) |
| 2. A (p. 207) | 6. C (p. 209) | 9. B (p. 214) |
| 3. A (p. 205) | 7. A (p. 212) | 10. C (p. 210) |
| 4. B (p. 208) | | |

Chapter 12

Teacher's Companion

CHAPTER OVERVIEW

This chapter describes a wide variety of hand tools and small equipment, pots and pans, knives, and knife basics.

CHAPTER OBJECTIVES

- 12.1 Identify hand tools and small equipment.
- 12.2 List the different types of knives used in the foodservice kitchen, and give examples of their uses.
- 12.3 Demonstrate the correct holding and cutting motions for a chef's knife.
- 12.4 Demonstrate the classical knife cuts.

ADVANCE PREPARATION

Review	- Chapter 12, pages 220–243 - Unit case study, "Introduction to the Kitchen," pages 198–199
Contact	- Equipment sales representative - District foodservice director to borrow small equipment for demonstrations
Prepare	- Equipment for sharpening knives - All equipment mentioned as a key term that can be physically available. Collect images of other items not available in the classroom. - Catalogs (can be found online) for tools and equipment - Videos of classical knife cuts - Videos of honing and sharpening a knife - This is the introduction to knife skills—stress the importance of safety and allow students to practice basic cuts, if possible. If your own knife skills need work, contact a chef to perform a demo for you and the students. Potatoes and carrots are excellent for practicing knife cuts. - Shell eggs (enough for six per small group) for end-of-chapter activity - Potatoes for end-of-chapter activity

CHAPTER BREAKDOWN

PAGE 222

INTRODUCTION

Discuss

- Why is it important to use good-quality kitchen knives?
- What items of smallware should be in every kitchen and why?
- Students should know what the equipment is and does. The items are broken into categories that include: smallware, hand tools and small equipment (Table 12.1), measuring utensils (Table 12.2), cookware, pots (Table 12.3), pans (Table 12.4), and knives (or related to knives and their maintenance).

PAGES 222–228

HAND TOOLS AND SMALL EQUIPMENT

Customized Instruction

Learning disabled	Create flash cards with images of the equipment on one side, and a definition and use on the other side.
Academically gifted	Inventory all smallwares in the kitchen and create a list of what items are in stock and what items need to be replaced. Create a spreadsheet with research on pricing to list the different costs to replace items.
ELL	Search for videos that show how to use the various hand tools and small equipment. Create a graphic organizer or word wall with classmates to plot all the terms from the chapter.

Reinforce and Review

- Hand tools, like knives, are designed to perform specific tasks in the kitchen, such as cutting, shaping, and combining foods.
- Small hand tools are used for a variety of purposes, such as holding, straining, shaping, mixing, and cutting.
- Measuring equipment, as discussed in chapter 4, is used widely in professional kitchens.
- This section describes some other common measuring equipment that students might not consider “traditional.”

Discuss

- This list of smallware includes items found in the typical foodservice establishment. Ask students to consider the expense of supplying all this equipment in addition to large items like ovens and refrigeration. Since these items are ultimately paid for through food sales, encourage students to imagine how much food, at what prices, must be sold to cover all the costs associated with operating a foodservice establishment.

Vocabulary Review

- **Smallware:** Small hand tools and small equipment easy to use for food pre-preparation; these tools are designed to aid in cutting, shaping, moving, or combining food, and many are designed for specific tasks.
- **Bench scraper:** A rigid, small sheet of stainless steel with a metal blade, used to scrape material off of a work surface or “bench” or to cut or portion soft, semifirm items (like bread dough or cookie dough).
- **Bowl scraper:** A flexible piece of rubber or plastic used to combine ingredients in a bowl and then scrape them out again, to cut and separate dough, and to scrape extra dough and flour from wooden worktables.
- **Can opener:** A large can opener is mounted onto a metal utility table in order to be used to open large cans; a small, handheld can opener, like those for home use, may be used in a restaurant or foodservice kitchen to open small cans of food.
- **Channel knife:** A knife used to cut grooves lengthwise in a vegetable such as a carrot.
- **Cheesecloth:** A light, fine-mesh gauze for straining liquids such as stocks or custards, for bundling herbs, or for thickening yogurt.
- **China cap:** A pierced, metal, cone-shaped strainer used to strain soups, stocks, and other liquids to remove all solid ingredients. A very fine China cap made of metal mesh and called a *chinois* (chin-WAH) strains out very small solid ingredients.
- **Colander:** Item that allows liquid to drain while retaining solids such as cooked pasta and vegetables. Colanders stand on metal feet, while strainers are usually handheld.
- **Cook’s fork:** A fork with two long, pointed tines to lift items to the plate and steady an item being cut. Do not use a cook’s fork to turn meat that is being dry-cooked because the tines may pierce the meat and release the juices.
- **Corer:** Tool used to remove the core of an apple or pear in one long, round piece.
- **Fish scaler:** Tool used to remove scales from a fish.
- **Food mill:** A machine that comes with several detachable parts, such as coarse, medium, and fine grating screens, and used to purée food to different consistencies.
- **Funnel:** Cone-shaped item used to pour liquid from a larger to a smaller container.
- **Grater:** Also known as a shredder, this item grates food into fine pieces. Examples include graters for hard cheeses, vegetables, and potatoes.
- **Kitchen shears:** Strong scissors used to cut string and butcher’s twine and to cut grapes into small clusters.
- **Offset spatula:** Long, narrow tool that has a flat metal blade at one end, often used to frost cakes or even out a layer of batter.
- **Parisienne scoop:** Also called a melon baller, this round scoop cuts ball shapes out of soft fruits and vegetables.
- **Pastry bag:** A bag made of canvas, plastic, or nylon that is used to pipe out frostings, creams, and puréed foods. Different pastry tips attach to create a variety of decorations.

- **Pastry brush:** Item used to brush egg wash, melted butter, glazes, and other liquids onto items such as baked goods, raw pasta, or meat.
- **Peeler:** Tool that cuts a thick layer from vegetables and fruits more efficiently than a paring knife.
- **Pie server:** A specially shaped spatula made for lifting out and serving pieces of pie. It is also known as a wedge spatula.
- **Piping tools:** These tools include piping bags (canvas, plastic, disposable), decorative tips (metal or plastic, of varying shapes), and presses (cylinders with a handle on one end that force dough through a metal cutout).
- **Pizza cutter:** Also known as a pastry wheel, this tool is used to cut pizza and rolled-out dough.
- **Ricer:** Tool used to create rice-like pieces of cooked food by pressing the food through a sheet of small holes—known as a pierced hopper—that are typically about the diameter of a piece of rice.
- **Bakers rolling pin:** A cylinder used to roll over pastry to flatten or shape it; this rolling pin is simply a straight cylinder.
- **Classic rolling pin:** A cylinder used to roll over pastry to flatten or shape it; this rolling pin has two handles attached to a center dowel that turns.
- **French rolling pin:** A cylinder used to roll over pastry to flatten or shape it; this rolling pin is a single piece that tapers slightly on the ends.
- **Rubber spatula:** Often called a scraper, this spatula with a long handle is used to fold ingredients together and scrape the sides of bowls.
- **Sandwich spreader:** A short, stubby spatula used to spread sandwich fillings and condiments.
- **Sieve:** Also known as a sifter, this tool has a mesh screen to sift flour and other dry baking ingredients and to remove any large impurities, as well as to combine and aerate the food product.
- **Skimmer:** Tool with a large, round, flat head with holes that is used to remove foam from stock or soup and to remove solid ingredients from liquids. Mesh skimmers are also available.
- **Spoons:** Cooking spoons for quantity cooking are solid, perforated, or slotted and are made of stainless steel and hold about three ounces. Solid spoons are serving spoons without holes that are used to spoon out both liquid and solid ingredients; perforated and slotted spoons have holes that allow liquid to drain while holding the solid items on the spoon.
- **Straight spatula:** A flexible, round-tipped tool used for icing cakes, spreading fillings and glazes, leveling dry ingredients when measuring, and even turning small pancakes and other food items.
- **Strainer:** Made of mesh-like material or metal with holes in it, strainers come in different sizes and are often shaped like a bowl. This tool is used to strain pasta, vegetables, and other larger food items cooked in liquid.
- **Tamis/drum sieve:** A screen that stretches across a metal or wood base that is shaped like a drum. Food is forced through it, and it is used to purée very soft food and to remove solids from purées.
- **Tongs:** Scissor-like utensil that food handlers use to safely pick up and handle all kinds of solid food.

- **Wire whip (whisk):** Tool that comes in different sizes and heaviness and is used to mix, beat, and stir food.
- **Zester:** Tool used to shred small pieces of the outer peel of citrus fruits such as oranges, lemons, and limes.
- **Balance scale/baker's scale:** Scale used to weigh dry ingredients in a bakeshop.
- **Digital scale:** A precise scale used to measure weight that provides a digital readout in both U.S. and metric systems.
- **Ladle:** Tool available in various sizes measured in fluid ounces and milliliters that is used to portion out liquids.
- **Measuring cup:** Tool used to measure varying quantities of both dry goods and liquids; measuring cups with spouts are useful for measuring and pouring liquids.
- **Measuring spoon:** Used to measure small quantities of spices or liquids, these spoons measure in the amounts of $\frac{1}{8}$ teaspoon (not all sets include this smallest size), $\frac{1}{4}$ teaspoon, $\frac{1}{2}$ teaspoon, 1 teaspoon, and 1 tablespoon.
- **Portion scale:** Scale used to measure recipe ingredients, from $\frac{1}{4}$ ounce to 1 pound to 2 pounds.
- **Portion scoop:** Short-handled measuring utensil that comes in various sizes and is used to scoop out soft foods, such as ice cream, butter, and sour cream.
- **Thermocouple:** Thermometer that measures temperature in thick or thin food almost instantly as temperature is read at the tip of the probe.
- **Volume measures:** Similar to liquid measuring cups but bigger, these larger measuring cups are usually available in sizes of 1 pint, 1 quart, $\frac{1}{2}$ gallon, and 1 gallon.

Knowledge Check Answers (Page 228)

1. China cap, colander, strainer, and skimmer.
2. A straight spatula is a flexible, round-tipped tool used for icing cakes, spreading fillings and glazes, leveling dry ingredients when measuring, and even turning small pancakes and other food items. A bench scraper is a rigid, small sheet of stainless steel with a metal blade. It is used to scrape material off of a work surface or "bench" or to cut or portion soft, semifirm items.
3. Students answers will vary, but students should describe five of the items from Table 12.2. on pages 227–228.

In-Class Activity: Physical

Name That Smallware!

Students should close their books and store their notes. Have ready a table laden with different hand tools, covered with a sheet or drop cloth. Divide the class into two teams. Hold up an item of smallware. The first team to identify the item correctly gets one point, and the first team to identify the appropriate use of the item gets two points. Keep going until all the items have been identified.

PAGES 229–232 POTS AND PANS**Customized Instruction**

Learning disabled	Create flash cards with images of the equipment on one side, and a definition and use on the other side. Create a video or poster to show how to care for pots and pans, using the steps listed for various types on page 232.
Academically gifted	Inventory all pots and pans in the kitchen and create a list of what items are in stock and what items need to be replaced. Create a spreadsheet with research on pricing to list the different costs to replace items. Create guides for how to care for pots and pans and present to the class.
ELL	Search for videos that show how to use the various pots and pans. Create a graphic organizer or word wall with classmates to plot all the terms from the chapter.

Reinforce and Review

- In general, pots tend to be deeper than pans and typically have straight or slightly slanted sides, while pans are usually shallow and broad.
- Pans are usually shallow, which allows reduction to occur more quickly than in a taller pot.
- Hotel pans are some of the most versatile items in the professional kitchen, as they can be used for cooking, baking, holding, and storage.
- Although sauté pans and woks evolved in different cultures and have different shapes, they can be used interchangeably for many preparations in the contemporary foodservice establishment.
- Care should always be taken to use the correct cleaning methods for any pots or pans.

Discuss

- Why would a cook choose one piece of equipment over another? For instance, when would a sauce pot be used instead of a stockpot, and vice versa?
- Which pans appear to have a wide general application and which appear to have very narrow functions?
- Why might a cook or a chef choose a pan made of one material over another?
- Why do pots and pans made of different materials require different cleaning methods?
- Why is it important for cooks (as opposed to dishwashing staff) to know how equipment made of different materials should be maintained?

Vocabulary Review

- **Cookware:** Pots and pans that are essential tools in the professional kitchen; they are available in many shapes and sizes and are made of a variety of materials, such as copper, cast iron, chrome, stainless steel, and aluminum, with or without a nonstick coating.
- **Pots:** In general, pots are larger vessels, available in a range of sizes based on volume, with straight sides and two loop handles. They are used on the stove top for making stocks or soups, or for boiling or simmering food.
- **Brazier:** Also called a *rondeau*, this medium to large pot, more shallow than saucepots, has straight sides and two handles for lifting, and is typically made of heavyweight material with a thick bottom for good heat distribution. It is used to braise meat and vegetables.
- **Double boiler:** Item with an upper pot and a lower pot that is used for melting chocolate or heating milk, cream, or butter; the lower pot holds boiling or simmering water that gently cooks the food in the upper pot.
- **Saucepot:** More shallow than stockpots, with straight sides and two loop handles for lifting, saucepots are used to prepare sauces, soups, and other liquids.
- **Stockpot:** A large pot for preparing stocks; some stockpots have spigots that allow the liquid to be poured out easily without losing any of the solid ingredients.
- **Pans:** Usually shallower than pots, with one long handle and either straight or sloped sides, pans are used for general stove-top cooking, especially sautéing, frying, or reducing liquids rapidly, as well as for baking and for holding food.
- **Cake pan:** Pan with straight sides and available in a variety of sizes and shapes, including round, rectangular, square, and specialty (such as heart-shaped).
- **Cast-iron skillet:** A heavy, thick pan made of cast iron, used to pan grill or pan-fry food like meat or vegetables.
- **Crêpe pan:** A shallow skillet with very short, slightly sloping sides, used to create crêpes, a thin pancake.
- **Fish poacher:** A long, narrow, metal pan with a perforated rack used to raise or lower fish into a cooking liquid so it does not break apart.
- **Hotel pan:** Pan used to hold prepared food in a steam table, hot-holding cabinet, or refrigerator; it can sometimes be used for baking, roasting, or poaching, but because it is thin, it generally does not do well with proteins and vegetables.
- **Muffin tin:** Item with small, round cups or molds used to make muffins, cupcakes, or other small baked goods.
- **Roasting pan:** A shallow, rectangular pan with medium-high sides and two handles, used to roast and bake foods, such as meat and poultry.
- **Saucepan:** A pan with medium height, straight sides, and a single long handle, used for general cooking, in particular liquid or liquid-based mixtures, on ranges.
- **Sauté pan:** Pan used strictly to sauté items; the original French sauté pan is slope-sided and made of thin metal for quick heating.

- **Sautoir:** Typically used for tasks such as pan-frying, stir-frying, and shallow poaching, the classic *sautoir* shape has a wide bottom and straight sides.
- **Sheet pan:** A very shallow pan, about one inch deep, used for just about anything, from baking cookies to roasting vegetables.
- **Springform pan:** A two-part, spring-loaded baking pan, where the bottom piece and ring secure with a spring to hold the bottom in place. Once an item is baked, the chef can release the spring to make it easy to remove the cake from the pan.
- **Wok:** A metal pan with a rounded bottom and curved sides, which make it easy to toss or stir food. Cooks use woks especially for frying and steaming in Asian cooking.

Knowledge Check Answers (Page 232)

1. Pots are available in a range of sizes based on volume. Use them on the stove top for making stocks or soups, or for boiling or simmering food. Pans are usually smaller and shallower than pots. Pans are used for general stove-top cooking, especially sautéing, frying, or reducing liquids rapidly, as well as for baking and for holding food.
2. Aluminum: Hand wash in soapy water. Use a nonabrasive cleaner to remove stains. Cast iron: Wash in warm, sudsy water with a mild detergent. Reapply a thin layer of fat or oil and air-dry to prevent rust and pitting. Some people feel that cleaning and sanitizing cast iron can remove or damage the seasoning on the pan. Therefore they opt for cleaning techniques such as scrubbing with coarse salt and a paper towel or clean cloth. Chrome: Wash in warm water with soap or detergent. Do not use abrasive cleaners. Copper: Use commercial cleaners specifically made for copper to remove discoloration before regular washing. Stainless steel: Wash in hot, soapy water. Rinse thoroughly and air-dry. Nonstick coating: Use a plastic mesh scrubber to scrub inside of the nonstick pan to avoid scratches. Remove all residue from the bottom of the pan or food may burn.

Homework Activity: Literacy

Cultural Equipment

Select an item of equipment from a different cuisine, such as a tortilla press or spaetzle maker. Research the piece of equipment, including how and when it is used.

Homework Activity: Literacy

Pots and Pans

Students should pick a pot or pan. Research the item's origins, history, and common uses. Is this item commonly used today? Write a short essay.

Customized Instruction

Learning disabled	Create posters with a map or diagram to show the different parts of the knife. Create flash cards to show the image of the knife on one side, and the definition or use on the other side.
Academically gifted	Research the history of Japanese knife-making. Write an essay with your findings, including comparing and contrasting typical Western-style knives.
ELL	Search for videos that show how to use a steel and sharpening stone. Do you notice different techniques? Write a short summary of what you found in the videos. Watch a video of proper peeling technique. Read the information in the Essential Skills feature listed on page 237, and use the guidelines to demonstrate the technique.

Reinforce and Review

- The two main parts of a knife are the blade, or cutting surface, and the handle, or holding surface.
- Most knives have tapered cutting edges; other options include serrated, *granton*, and single-side.
- The heel of the blade is used to cut through large, hard, or tough foods, while the tip is used for more delicate work.
- Some knives, such as clam or oyster knives, are used to pry rather than cut, although the blades can still be quite sharp.
- Chefs use a sharpening stone and a steel to keep their knives sharp. Diamond steels and ceramic steels can produce extremely sharp edges if used properly.
- Essential Skills: Peeling Technique: This feature lists the steps to using a peeler. What other uses are there for peelers? How can these cuts and other edible trim be incorporated into dishes, thereby helping to control food costs?

Discuss

- Which knives do students perceive as the most useful and why?
- Why are knives with partial tangs used for lighter work? They are not sturdy enough to hold up to the rigors of chopping and slicing in a professional kitchen. Introduce the concept of a “rat-tail” tang. The tang on these knives is not attached to the handle with rivets, but instead consists of a narrow piece of metal attached within the handle—like a foot in a sock. These knives tend to be weak and are easily broken.
- Which knives would students expect to find in a classical French restaurant? A seafood restaurant? A steak house? A sandwich shop? A butcher shop?
- What is the difference between steeling and sharpening?
- When a new cook arrives for the first day in the kitchen, other cooks will often drift by his or her station to introduce themselves—and examine the newcomer’s knives. How can proper knife selection and maintenance be components of professionalism?

Vocabulary Review

- **Knives:** The most widely used pieces of kitchen equipment, used in most cooking preparations, from slicing to chopping to shredding. Each knife is designed for a specific purpose, such as paring a vegetable or cutting meat from the bone. A good knife is made of stainless steel because it is very durable and stays sharp for a long time.
- **Boning knife:** A six-inch knife used to separate raw meat from the bone. There are two types: one has a thin, flexible blade that is shorter than the blade of a chef's knife; the other has a thicker, less flexible blade used for cutting larger pieces of protein.
- **Chef's knife:** An all-purpose knife for chopping, slicing, and mincing all types of foods; its blade is normally 8 to 14 inches long and tapers to a point at the tip.
- **Clam knife:** This short, blunt-point knife is used to shuck, or open, clams; unlike an oyster knife, it has a very sharp edge.
- **Cleaver:** This heavy, rectangular knife is used to chop all kinds of food, from vegetables to meat, and is also able to cut through bones.
- **Oyster knife:** A short, stubby, unsharpened knife with a pointed tip for shucking oysters.
- **Paring knife:** A small knife with a sharp blade, only two to four inches long, that is used to trim and pare vegetables and fruits.
- **Santoku:** A general-purpose kitchen knife with a five- to seven-inch blade with *granton* on the side that help food to release easily. The santoku knife is designed for a comfortable, well-balanced grip, while allowing for full blade use.
- **Serrated slicer:** A knife with a long, thin, serrated blade that is used to slice breads and cakes.
- **Slicer:** This knife is used for slicing cooked meat; its blade can be as long as 14 inches.
- **Steak knife:** This curved knife is used for cutting beef steaks from the loin.
- **Tourné:** Similar to a paring knife, this knife has a curved blade for cutting the curved surfaces of vegetables; it is sometimes called a bird's beak for its shape.
- **Blade:** The cutting surface of a knife, which is made of metal and is either forged or stamped.
- **Forged blade:** A blade made from a single piece of heated metal that is dropped into a mold and then struck with a hammer and pounded into the correct shape.
- **Stamped blade:** A knife blade that is made by cutting blade-shaped pieces from sheets of milled steel.
- **Honing:** The regular maintenance required to keep knives in the best shape.
- **Steel:** A long metal rod that is lightly grooved and magnetized and is used to remove the microscopic burrs that are created as a knife is used. The steel also helps to return a blade to the convex shape that exists on a sharp blade. The steel should be used daily and before each cut to ensure a blade is at its best. A knife should be wiped off after using a steel to remove any microparticles of metal.

- **Sharpening stone:** A stone used to grind and hone the edges of steel tools and implements. Sharpening removes metal from a blade, so it is only done when a knife is so dull that it cannot be brought back to a sharp edge with a steel. The knife blade is held at a 20-degree angle to a sharpening stone. The blade is then passed across the oiled or watered stone an equal number of times on each side until the desired sharpness is achieved. Often sharpening stone units hold three stones, ranging from coarse to very fine, allowing the blade to be smoothed as the process is finished.

Homework Activity: Science

The Drag

Research the concept of drag—the forces that inhibit the movement of an object through a fluid. Describe the effects of drag and apply them to the foodservice industry.

For example, how does drag affect the movement of a knife through a solid object? Can this be legitimately considered drag since it does not involve a fluid?

Alternately, consider the movement of a mixing paddle stirring a thick liquid, as opposed to the same paddle stirring a thin liquid. What role does drag play in these instances?

Write a one-page report summarizing your findings.

In-Class Activity: Science

Reduction Relationships

Students should pour one cup of liquid (water is fine) into a shallow pan and one cup of liquid into a deep pot. Use a ruler to measure how deep the liquid is in each vessel.

Each vessel should then be placed on the stove top, using the same amount of heat under each. Time how long it takes to reduce the liquid in each pan by half, again using the ruler.

Encourage students to discuss why the liquid in the shallow container reduces more quickly than the liquid in the deep container.

Customized Instruction

Learning disabled	Use a ruler to create a poster with the measurements listed in Table 12.7 on pages 239–240 for the classical knife cuts. Practice setting up a station to cut vegetables. Make a list of items you need and what you need to do first, then demonstrate.
Academically gifted	Measure and build three-dimensional models of each knife cut excluding chiffonade. Create a diagram for proper station setup, considering all details. Present to the class.

(continued)

ELL	Search for videos that show each particular knife cut being practiced. What cuts are used for certain items? Do you notice that some dishes call for certain cuts? Write notes of your findings.
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Reinforce and Review

- Most raw ingredients, aside from dry goods, require some sort of trimming or cutting before they can be cooked.
- Most knives are used in conjunction with cutting boards. One hand holds down the ingredient and guides the knife, while the other hand grips the knife.
- Review the exact size of each particular cut.

Discuss

- Learning to use knives properly is fundamental to a successful career in the culinary arts. What other skills do students think are equally or more important?

Vocabulary Review

- **Guiding hand:** While cutting, this is the hand that is not holding the knife; it prevents slippage and helps to control the size of the cut. The claw grip is the most acceptable grip for the guiding hand.

Knowledge Check Answers (Page 240)

1. The two main parts of the knife are the blade and the handle.
2. A boning knife is used to separate raw meat from the bone. The blade is thin and flexible. A cleaver is used to chop all kinds of food, from vegetables to meat. It can also cut through bones. A cleaver is heavy and rectangular.
3. To use knives properly, hold the food on the cutting board with one hand and hold the knife by its handle with the other. In every grip, the hand that is not holding the knife prevents slippage and helps to control the size of the cut. The fingers of the guiding hand are bent inward toward the palm, and the thumb is held well back. One finger should be the farthest forward, with the other fingers and thumb behind that finger.
4. The 11 classical knife cuts are large dice, medium dice, small dice, *batonnet*, *brunoise*, julienne, rondelle, *chiffonade*, diagonal, *paysanne*, and *tourné*.

Homework Activity: Knife Basics (p. 232)

What types of knives do you have at home? Do they all fit into the list provided on pages 234–235? If not, what other types of knives do you have?

Why are some knives more appropriate to have at home than a professional kitchen, and vice versa? If you were purchasing knives to use at home, what types would you want? Write a one-page essay on these topics.

PAGE 241

CASE STUDY FOLLOW-UP ANSWERS: “INTRODUCTION TO THE KITCHEN”

1. As a prep cook, Abby should have measuring spoons, measuring bowls, mixing bowls, cutting boards, a vegetable peeler, a chef’s knife, and a paring knife.
2. *Mise en place* is the most important element of cooking. *Mise en place* means to “put in place.” It means all the preparation and assembly of ingredients, pans, utensils, and equipment or serving pieces needed for a particular dish or service.

PAGE 242

CHAPTER ACTIVITIES ANSWERS

- **History of Knives:** Student answers will vary; however, the Internet and library are great places to start. Students may choose five knives from Table 12.5 on pages 234–235.
- **Crack Some Eggs:** Students should accurately perform the measurements and mathematic operations for this activity. This is also an opportunity to ensure that students understand the different stages in whipping separated eggs. Stress that volume is by measurement.
- **Get the Most Out of Your Potato:** Student answers will vary. The activity should be used for students to practice medium-dice cuts of a potato using a chef’s knife, and it should reinforce the idea of cutting uniformly in order to not only improve appearance and evenness of cooking, but also to reduce waste.
- **Knife Safety Poster:** Students may be as creative as they like provided they accurately portray how to safely use a knife.
- **Practice Basic Knife Cuts:** It is important that students follow the steps for correctly using a knife. While the cuts are specific, students will need time to practice this skill to achieve proficiency.
- **Preparation Tools:** Have students find recipes for each item and practice finding the *mise en place* and the correct tools for the job. Student answers will vary; however, consider all items needed from start to finish. For example, for cheese pizza you would need: towels, sanitizer, gloves, a scale to weigh ingredients, measuring cups, dough scraper, mixer, prep table, mixing bowls, dough cutter, cutting board and knife for sauce ingredients, pot to cook sauce, spatula to stir, ladle to portion, container to store sauce, container for cheese, oven to cook, pan to cut on, pizza cutter, spatula to serve.

PAGE 243

EXAM PREP ANSWERS

- | | | |
|---------------|---------------|----------------|
| 1. A (p. 235) | 5. C (p. 230) | 8. D (p. 223) |
| 2. A (p. 231) | 6. B (p. 239) | 9. A (p. 224) |
| 3. A (p. 226) | 7. D (p. 236) | 10. D (p. 238) |
| 4. A (p. 240) | | |

Chapter 13

Teacher's Companion

CHAPTER OVERVIEW

This chapter discusses workstations, the kitchen brigade system, the dining room brigade system, *mise en place*, seasoning and flavoring, and nutrition labels.

CHAPTER OBJECTIVES

- 13.1 List the major positions in a modern, professional kitchen.
- 13.2 Explain the importance of *mise en place*.
- 13.3 Explain the difference between seasoning and flavoring.
- 13.4 Describe and demonstrate basic preparation techniques.
- 13.5 Interpret information on a nutrition label.

ADVANCE PREPARATION

Review	- Unit case study, "Introduction to the Kitchen," pages 198–199 - Philosophy of <i>mise en place</i>
Contact	Nutritionist
Prepare	Selection of spices, herbs, and seasonings for students to smell and taste. Try to find fresh and dry versions to compare.

CHAPTER BREAKDOWN

PAGE 246

INTRODUCTION

Discuss

- What work sections and their stations are found in the professional kitchen?
- Why is *mise en place* so important in the professional kitchen?

PAGES 246–249

WORKSTATIONS

Customized Instruction

Learning disabled	Research images online of different workstations in professional kitchens. How are they similar? Different? Make a list to describe your findings. Create posters to describe the kitchen brigade system and the dining-room brigade system. Find images to match the positions or the tasks performed by those positions.
Academically gifted	Design a kitchen with all the stations listed in Table 13.1. Price the items and give an estimate of how much the entire kitchen would cost to create. Research the history of the brigade system and Chef Escoffier's role in its creation. Write an essay.
ELL	Build a word wall to define the sections and stations found in Table 13.1. Use the Internet to look up images or video clips of the various positions in the kitchen and dining-room brigades. Create a graphic organizer to help define what each position does, and how the positions are related to each other.

Reinforce and Review

- Budget and space are the two major determinants of the number of workstations a kitchen will have.
- A good kitchen design maximizes the flow of goods and staff from one area to the next as well as within areas. Food flows from receiving through storage, food preparation, holding, and service areas until it reaches its ultimate destination: the guest.
- Kitchen workstations are arranged to take advantage of shared equipment, which lowers costs and increases efficiency.
- A brigade is a system of staffing a kitchen so that each worker is assigned a particular role and corresponding set of tasks. Brigades are hierarchical in nature, with the executive chef at the top of the "pyramid." Most contemporary foodservice operations use a modified form of the brigade system.
- The dining-room brigade is led by the maître d', who trains service staff, oversees guest services, and coordinates dining-room activity with the chef.

Discuss

- Encourage students to envision what restaurant kitchens might have been like before the brigade system was introduced. What potential problems can students identify?
- Encourage students to discuss the extent to which this system is practical today. Is it realistic to have so many staff members doing different things?
- What types of contemporary foodservice establishment might have employees in each of these categories? Which positions could be combined?
- The executive chef is responsible for all kitchen operations. But exactly what does he or she do all day? Encourage students to discuss some activities that fall under the purview of the executive chef.
- Why are there so many fewer positions in the dining room than in the kitchen?

Vocabulary Review

- **Chef:** The person responsible for all kitchen operations in the modern kitchen brigade system.
- **Sous chef:** Also known as the second chef, the sous chef is responsible for scheduling personnel and covering the chef or station chefs' work as necessary, accepting orders from the dining room and relaying them to various station chefs, and reviewing the dishes before service.
- **Station chef:** These chefs produce the menu items under the supervision of the chef or sous chef; each station chef or line cook is assigned a specific task based on either the cooking method and equipment or the category of items to be produced.
- **Pastry chef:** This chef produces all baked goods, desserts, and pastries for an operation.
- **Expediter:** Person in the modern kitchen brigade system who communicates orders, makes sure the food is cooked in the right order and for all parties at the table, and sees that servers run food to the table while it is warm and ready.
- **Wine steward:** Person responsible for the wine service, including purchasing wines, assisting guests in selecting wines, and serving the wines.
- **Headwaiter:** Person responsible for service throughout the dining room or a section of it.
- **Captain:** Person responsible for explaining the menu to guests and taking their orders. The captain is also responsible for any table-side preparations.
- **Front waiter:** Person responsible for assuring that the tables are set properly for each course, food orders are delivered properly to the correct tables, and the needs of the guests are met.
- **Back waiter:** Person responsible for clearing plates, refilling water glasses, and other general tasks appropriate for new dining-room workers.

Knowledge Check Answers (Page 249)

1. A workstation is a work area in the kitchen dedicated to a particular task, such as broiling or salad making. Workstations using the same or similar equipment for related tasks are grouped together into a work section. Workstations help keep a kitchen running smoothly.
2. The chef is responsible for all kitchen operations.
3. The front waiter is responsible for assuring that the tables are set properly for each course and that food orders are delivered properly to the correct tables.

PAGES 250–251
MISE EN PLACE

Customized Instruction

Learning disabled	Choose your favorite recipe and make a list of the <i>mise en place</i> steps.
Academically gifted	Research the chef's philosophy of <i>mise en place</i> . Write an essay on your findings. How can <i>mise en place</i> improve other areas of your life?
ELL	Review a favorite recipe. Make a chart that is similar to Figure 13.2 on page 251 to create a timeline for the recipe.

Reinforce and Review

- *Mise en place* refers to all aspects of the preparation and assembly of a dish or for a service period.
- The two problems facing the professional chef are that some work must be done in advance, but most foods begin to deteriorate immediately after preparation.
- Video: Demonstrating *Mise en Place*: This video gives a visual example of the *mise en place* involved in the preparation and execution of a sauce with a lot of steps, demi-glace. This compliments the basics of *mise en place* discussed on pages 250–251.

Discuss

- Why is it important to plan ahead to ensure high-quality service for guests?
- Preparing to cook is said to be as important as the cooking process itself. How are both mental preparation and physical preparation essential components of success in the professional kitchen?

Vocabulary Review

- ***Mise en place***: French for “to put in place”; it refers to the preparation and assembly of ingredients, pans, utensils, equipment, or serving pieces needed for a particular dish or service, and it includes not only the production of a dish, but also the setup before and cleaning while preparing.

Knowledge Check Answers (Page 251)

1. *Mise en place* is French for “to put in place.” It refers to the preparation and assembly of ingredients, pans, utensils, equipment, or serving pieces needed for a particular dish or service.

2. It includes not only the production of a dish, but also the setup before and cleaning while preparing.
3. The steps to pre-preparation include assembling the tools; assembling the ingredients; washing, trimming, cutting, preparing, and measuring the ingredients; and preparing the equipment.

In-Class Activity: Physical

Creative Planning

Working in groups of two to three, plan a creative skit to demonstrate either the four steps of pre-preparation or the four building blocks of *mise en place*.

Homework Activity: Math

Schedule, Schmedule

You own a restaurant that seats 100, usually serves 250 guests per service, and is open 5 days each week, Wednesday through Sunday. Prep time begins at 1:00 p.m. and the dinner service is 5:00–10:00 p.m. All cooking staff should have left the building by 11:00 p.m.

Your seven cooks, all of whom have very similar abilities and experiences, are named Mike, Michele, Claire, Bob, Andrew, Alexandra, and Gary. They can each work a maximum of 40 hours and should each work all 5 days—except Gary, who needs Wednesday off this week for an excused absence. These are the only staff members who cook.

Draw up a weekly schedule for these seven cooks, either by hand or by using a computer program. Is it possible to give each cook 40 hours in this week without overtime, while ensuring that all necessary work is completed?

After completing your schedule, write one to two paragraphs describing your staffing choices.

In-Class Activity: Science

Peaks

Measure one cup of cream and heat it to room temperature, using a thermometer. In the meantime, place a bowl and a whisk in the refrigerator.

Pour all of the cream into a room-temperature bowl. Timing yourself with a clock or stopwatch, use a room-temperature whisk to whip the cream. How long does it take to achieve soft peaks? Medium peaks? Stiff peaks? Graph your results.

Now measure one cup of cream and pour it into the bowl you have previously chilled. Timing yourself, use the chilled whisk to whip the cream. How long does it take to achieve soft peaks? Medium peaks? Stiff peaks? Graph your results.

Compare your results with other students. How do you explain your results?

Homework Activity: Literacy

Steps to Prep

Select a basic *mise en place* skill—not necessarily one in the text, but one that you think qualifies as a pre-preparation skill. Create a poster illustrating the steps in the process of this skill. Present your poster to the class, along with a brief oral summary.

PAGES 252–258 SEASONING AND FLAVOR

Customized Instruction

Learning disabled	Measure out a series of dried herbs and spices. Smell each and take notes on what you discover. Can you guess the herb or spice? Why are some spices more expensive? Look up prices for some items listed in Table 13.6 and write a few notes on your findings.
Academically gifted	Research the history and impact of the spice trade. Write an essay with your findings. Inventory all herbs and spices and ensure all items are labeled properly. Write a memo on the proper storage of herbs and spices, using page 253 to start, and present to the class. Create a spreadsheet of items that need to be purchased or replaced, along with item names, item number, and pricing for the appropriate vendor.
ELL	Find images for all of the basic seasonings listed in Table 13.5. Match the images with the fresh and dried herbs provided by the instructor.

Reinforce and Review

- Proper seasoning makes an ingredient or dish taste more of itself, not more like the seasoning ingredient.
- Seasonings should be added at the beginning of the cooking process to create a depth of flavor, although additional seasoning can be added just before serving if needed.
- The four basic types of seasoning ingredients are salts, peppers, sugars, and acids.
- Flavorings change the taste of the original food item, while seasonings enhance the taste of the original food item.
- Herbs and spices are common plant-based flavorings. Herbs are usually derived from the more delicate parts of the plant, while spices are usually derived from the plant's sturdier components. Herbs are available fresh or dried. Dried herbs are stronger and therefore impart more flavor.
- Video: Peeling and Dicing an Onion: This video shows in detail the steps described in the Essential Skills feature on page 263.
- Video: Clarifying Butter: This video shows in detail the steps described in the Essential Skills feature on page 259.

Discuss

- Both herbs and spices can be used either fresh or dry, sometimes in the same dish. Encourage students to suggest dishes that use multiple herbs and/or spices, fresh and/or dried.
- What is the difference between a seasoning and a flavoring?
- Which plants have parts that can be used as both herbs and spices? For instance, cilantro leaves and coriander seeds come from the same plant. What other examples can students suggest?

Vocabulary Review

- **Seasoning:** Something that enhances the flavor of an item without changing the primary flavor of the dish. There are four basic types of seasoning ingredients: salts, peppers, sugars, and acids.
- **Flavor:** Refers to the way a food tastes.
- **Flavoring:** Something that enhances the base ingredients of the dish and brings another flavor to the product; for example, the addition of a small amount of onion might enhance the flavor of a dish without changing it, but the addition of a large quantity of onion introduces an onion flavor to the dish. There are many types of flavorings that have the capability to change the taste of the original food product: herbs, spices, extracts, fruits and vegetables, aromatic liquids, and cured food.
- **Consommé:** A clear soup made from richly-seasoned stock.
- **Herbs:** The leaves, stems, or flowers of an aromatic plant that are used to enhance and add to the flavor of food.
- **Spices:** The bark, roots, seeds, buds, or berries of an aromatic plant that are used to enhance and add to the flavor of food.

Knowledge Check (Page 258)

1. A seasoning is something that enhances the flavor of an item without changing the primary flavor of the dish. Seasonings must be used with care to prevent overuse, but they generally should be added at the start of the dish to create a depth of flavor. Flavor refers to the way a food tastes. A flavoring should enhance the base ingredients of the dish or bring another flavor to the product.
2. Herbs and spices are important ingredients used to enhance and add to the flavor of food. Herbs are the leaves, stems, or flowers of an aromatic plant. Spices are the bark, roots, seeds, buds, or berries of an aromatic plant.
3. Storing spices and herbs properly helps to keep them fresh and flavorful. Heat, light, and air all speed the loss of flavor and color. A tight glass jar in a covered cabinet, drawer, or pantry away from any heat or light source is the best protection for dried herbs and spices. Avoid storing them close to stoves, dishwashers, sinks, or air ducts. If the spice rack is open, make sure to locate it away from direct sunlight.

In-Class Activity: Science

Heat or Oil?

Smell the different spices and herbs that are available in the classroom. Do they remind you of any particular dishes?

Now, using multiple pans, heat small amounts of vegetable oil, adding one type of spice or herb to each pan and allowing the aromas to develop. Smell the warmed herbs and spices. Did the aromas change? Do they make you think of anything different now? Which do you think is responsible for any changes you notice—the heat or the oil?

Homework Activity: Writing

Spicy Stuff

The spice trade has played a critical role in the development of various cuisines, but it has also had a major effect on history, culture, economics, and society.

Select a spice from Table 13.6. Research its history and the effects that its production and trade may have had on society. Why is this spice important, either as a cultural footnote or in modern cuisine? Write a one-page report on your findings and discuss it with the class.

PAGES 259–263 PRE-PREPARATION TECHNIQUES

Customized Instruction

Learning disabled	Create or find images to make a visual story for the Essential Skills features for clarifying butter, setting up a water bath, separating eggs, whipping eggs, making a parchment liner for a round pan, and peeling and dicing an onion.
Academically gifted	Research the various ways eggs are used in the culinary world. Consider pre-preparation, preparation, and cooking methods. Make a poster with all of the ways (including specific dishes) eggs are served (either as a key ingredient, or as the main attraction).
ELL	Find and watch video clips on the Essential Skills features for clarifying butter, setting up a water bath, separating eggs, whipping eggs, making a parchment liner for a round pan, and peeling and dicing an onion. Take notes on what you see. Copy down the steps, and match the steps with screenshots or images.

Reinforce and Review

- *Mise en place* also includes basic pre-preparation techniques, such as separating eggs, whipping egg whites, setting up a bain-marie, and making pan liners.
- Essential Skills: Clarified Butter lists the steps on how to clarify butter. The product that remains after clarifying butter is pure butterfat. When melted, it is clear.

- Essential Skills: Setting Up a Water Bath lists the steps for setting up a water bath.
- Essential Skills: Separating Eggs lists the steps in separating eggs. What food safety issues are involved in separating eggs?
- Essential Skills: Whipping Eggs lists the steps in whipping eggs. Why should the separated whites be entirely free of yolks?
- Essential Skills: Making a Parchment Liner for a Round Pan lists the steps for making a parchment liner. What dishes would need round pan liners to prevent sticking?
- Essential Skills: Peeling and Dicing an Onion lists the steps to peeling and dicing an onion. Why are uniform, precise cuts so important in the professional kitchen?

Discuss

- Why should the separated whites be entirely free of yolks?
- What can happen when egg whites are overbeaten?
- What other vegetable-preparation techniques are considered essential?

Knowledge Check (Page 263)

1. Certain ingredients need to be refined before they are ready for use at the time of preparation. Some of the cooking techniques used in pre-preparation include clarifying butter, setting up a water bath, separating eggs, whipping egg whites, and making parchment liners for pans.
2. Clarified butter is used for sautéing when the desired end product does not require undo browning. Milk proteins tend to brown when exposed to high heat. Clarified butter is the result of separating and removing the milk proteins from the fat to “clarify” the fat for use.
3. Parchment paper is often used to line pans to prevent food from sticking to them. In addition, it is also used to make a cartouche, which covers the surface of a stew, soup, stock, or sauce to reduce evaporation; to prevent a skin from forming; and/or to keep components submerged.

Homework Activity: Writing

Hot-Water Baths

Research the use of hot-water baths in cooking food. For instance, how does the absence or presence of a hot-water bath affect the baking of a custard?

Find a recipe that calls for a hot-water bath. Make the recipe twice—once using the hot-water bath and once without it. Compare the results, paying special attention to the texture, flavor, and doneness of the finished product. Discuss your findings in a one-page paper, appending the recipe you followed.

PAGES 264–265 NUTRITION LABELS**Customized Instruction**

Learning disabled	How do you think nutritional information is connected to guests' needs? Make a list of your thoughts.
Academically gifted	Research the role of the nutrition label in legislation in recent years. What types of policy relate to the restaurant and foodservice industry? Write an essay with your findings (there are several policies or laws passed regarding nutrition and labels).
ELL	Find a nutrition label. Make a color-coded pie graph to show what percentages the item has toward the Daily Values (DVs). Make a poster with food items that equal the DVs for a 2000-calorie diet. For more information, go to http://www.letsmoveschools.org/ , https://letsmove.obamawhitehouse.archives.gov/about , or https://www.ars.usda.gov/northeast-area/beltsville-md/beltsville-human-nutrition-research-center/nutrient-data-laboratory/ .

Reinforce and Review

- The Nutrition Facts panel, found on packaged foods, helps consumers make healthy food choices, both in selecting a food item and in determining how much of that item to consume each day.
- Among other things, nutritional information can help consumers avoid food allergens, plan diets, limit cholesterol intake, and identify good sources of nutrients.
- Daily Values (DVs) of various nutrients are reported as percentages based on a 2,000-calorie diet. Providing this information on food labels helps people identify ways in which consuming particular foods affects their daily diets.
- Nutrition Facts panels contain data about a food's fat content: the number of calories from fat per serving, the total grams of fat per serving, and the number of grams of saturated fat per serving.

Discuss

- Why are some food items, such as fresh meats and vegetables, not required to bear nutritional information?
- How can nutritional data be used as part of a marketing campaign? For what types of foods and for what demographic groups might this be particularly successful?

Knowledge Check Answers (Page 265)

1. Servings size, servings per container, total calories, calories from fat, total fat, saturated fat, cholesterol, sodium, total carbohydrate, dietary fiber, sugar, protein, vitamin A and C, calcium, iron, and potassium.
2. Avoid food allergens, plan special diets, and understand the amount of fat, cholesterol, sodium, carbohydrates, fiber, sugars, and proteins included in each item.
3. The FDA requires the label to list vitamin D and the minerals calcium, iron, and potassium because they have identified that people generally do not get enough of these and are therefore at higher risk of chronic health problems.

In-Class Activity: Writing

Reading the Label

Bring a Nutritional Facts label from some packaged food to class. Be careful to clip out only the panel itself, omitting any other packaging material that could give others a clue to the food that was in the package.

Exchange the panels with other students. Consider the information on the panel you receive and use it to determine whether you think the food should be consumed frequently, in moderation, or rarely. Write a one-paragraph summary of results, defending your assessment.

PAGE 267

CASE STUDY FOLLOW-UP ANSWERS: “INTRODUCTION TO THE KITCHEN”

- Each day, Abby will use math to determine how much of each ingredient to prepare for service, to follow or convert a recipe, or to prepare a timeline.
- The kitchen brigade system is a method of staffing a kitchen by assigning each worker specific tasks, often related by cooking method, equipment, or the types of food being produced. This distinct hierarchy often runs from the chef to the sous chef and then to the station chefs.

PAGE 268

CHAPTER ACTIVITIES ANSWERS

- **Flavorings:** Student answers will vary. Make sure that a broad range of backgrounds is presented. You can also discuss local flavors and cuisines.
- **Why Do Some Like It Hot?:** Student answers will vary. Are there physical reasons why some people are more sensitive to hot, spicy foods? How much of it is what you’re used to?
- **Weight and Volume:** Student answers will vary. Make sure the same methods are used for each measurement to ensure consistency. Also be sure that the same size of egg is used in all cases (large eggs are most common in foodservice).
- **Hot Stuff:** Student answers will vary. Make sure students choose Mediterranean chicken dishes that include a few different spices. Have them think about why the amounts of those spices are important and how the dishes might taste with different amounts, referring back to the text on pages 252–253 regarding seasoning versus flavoring.
- **Kitchen Tasks:** Student answers will vary. The activity should reinforce how having proper planning, kitchen setup, and *mise en place* are important for efficiency and consistency.
- **SOPs:** Student answers will vary. The point is for students to come up with a consistent and efficient SOP for a repeatable task. The previous activity reinforced the need for such SOPs.

PAGE 269

EXAM PREP ANSWERS

- | | | |
|---------------|---------------|----------------|
| 1. B (p. 250) | 5. C (p. 264) | 8. A (p. 264) |
| 2. B (p. 253) | 6. B (p. 248) | 9. C (p. 258) |
| 3. B (p. 253) | 7. B (p. 248) | 10. D (p. 252) |
| 4. D (p. 252) | | |

Chapter 14

Teacher's Companion

CHAPTER OVERVIEW

This chapter explains the role of mathematics in the foodservice industry, covering the gamut from basic mathematic principles and measurement to standardizing recipes.

CHAPTER OBJECTIVES

- 14.1 Perform basic math calculations using numbers or fractions.
- 14.2 Identify the components and functions of a standardized recipe.
- 14.3 Convert recipes to yield smaller and larger quantities based on operational needs.
- 14.4 Explain the difference between customary and metric measurement units, and convert units between the two systems.
- 14.5 Demonstrate measuring and portioning using the appropriate smallwares and utensils.
- 14.6 Given a problem, calculate as purchased (AP) and edible portion (EP) amounts.
- 14.7 Calculate the total cost and portion costs of a standardized recipe.

ADVANCE PREPARATION

Review	• Chapter 14, pages 270–295 • Chapter 9, Level 2, for more advanced math problems • Unit case study, “Introduction to the Kitchen,” pages 198–199
Contact	• Math instructors for interdisciplinary work with applied math in the culinary classroom • A chef to discuss the use of math in the real-world kitchen
Prepare	• Sample math problems to accompany classroom discussion and for in-class assignments based on: converting recipes to yield smaller and larger quantities based on operational needs, explaining the difference between customary and metric measurement units, and converting units between the two systems, demonstrating measuring and portioning using the appropriate smallwares and utensils, calculating as purchased (AP) and edible portion (EP) amounts, and calculating the total cost and portion costs of a standardized recipe

CHAPTER BREAKDOWN

PAGE 272

INTRODUCTION

Discuss

- Review the role of basic math skills in the restaurant and foodservice industry.
- Discuss the importance of standardizing recipes.

PAGES 272–275

BASIC MATH CALCULATIONS

Customized Instruction

Learning disabled	Perform a pretest to informally assess math skill level. Use hands-on manipulations to represent the various math tools—use pizza to discuss fractions and percentages. Allow students to use flour and $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, and 1 cup measurements to conceptualize various fraction problems. A visual multiplication table may also prove useful here. Teach tips on a restaurant bill using 15 and 20 percent. Show students how to add the gratuity onto the bill.
Academically gifted	Pull several invoices and standardized recipes. Cost the ingredients based on the as-purchased pricing, and match the cost of the ingredients to the amounts needed for each recipe. For example, if flour is \$20.00 and comes in a 25-pound bag, the student will need to divide 20 by 25 to determine the cost per pound. If the recipe calls for 2 cups, the student will need to weigh 2 cups to determine the cost by weight. In this instance, recall that there are 16 ounces per pound, so the student may convert the cost to per ounce by dividing by 16. See chapter 9 in level 2 text if student's skill level is more advanced.
ELL	Create a graphic organizer to define the section's key terms: • Carrying: A technique used when adding large numbers; if a column adds to 10 or greater, the 1 is carried to the column immediately to the left and added to that column. • Borrowing: A technique used when subtracting large numbers; if a digit in one column is too large to be subtracted from the digit above it, then 10 is borrowed from the column immediately to the left. • Dividend: A number being divided by another number. • Divisor: The number by which another number is being divided. • Numerator: The upper portion of a fraction.

(continued)

ELL (cont)	• Denominator: The lower portion of a fraction. • Like fractions: Fractions in which the denominators to be added or subtracted are the same. • Lowest common denominator: The smallest number that both denominators can be divided into evenly; if the denominators to be added or subtracted are different from each other, then the first step is to determine the lowest common denominator. • Percent: Part per 100. Use images to assist in student expression of mastery. Teach the hotel pan as a fraction. Use the full size to show one. Use two half pans to show $\frac{1}{2}$ of the whole (they will fit inside the full-sized pan). Typical pans found include $\frac{1}{3}$ pans, $\frac{1}{6}$ pans, and $\frac{1}{9}$ pans. Show how each can fit into the whole, representing the fraction mentioned in the name.
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Reinforce and Review

- To add numbers, line them up in a column, assigning each column a value—ones, tens, hundreds, etc.
- To check your work when subtracting, simply add the answer to the subtracted number. The result should be the first number.
- To multiply large numbers, first multiply the digit in the ones column of the second number by the digits above it, moving from right to left.
- When adding and subtracting fractions, numerators are added and subtracted the same way as whole numbers, while denominators must be translated into equivalent units.
- The first step in dividing fractions with different denominators is to determine the lowest common denominator.
- When multiplying decimals, don't add the decimal point until the final answer. Sum up the number of digits after the decimal points in all the numbers being multiplied and then count that many spaces from the right in the answer. That's where the decimal point belongs.

Discuss

- What are the basic math calculations using numbers and fractions?
- Why is understanding basic mathematic operations key to being successful in following standardized recipes?

Vocabulary Review

- **Carrying:** A technique used when adding large numbers; if a column adds to 10 or greater, the 1 is carried to the column immediately to the left and added to that column.
- **Borrowing:** A technique used when subtracting large numbers; if a digit in one column is too large to be subtracted from the digit above it, then 10 is borrowed from the column immediately to the left.
- **Dividend:** A number being divided by another number.

- **Divisor:** The number by which another number is being divided.
- **Numerators:** The upper portion of a fraction.
- **Denominators:** The lower portion of a fraction.
- **Like fractions:** Fractions in which the denominators to be added or subtracted are the same.
- **Lowest common denominator:** The smallest number that both denominators can be divided into evenly; if the denominators to be added or subtracted are different from each other, then the first step is to determine the lowest common denominator.
- **Percent:** Part per 100.

Knowledge Check Answers (Page 275)

1. The basic math calculations using numbers and fractions are addition, subtraction, multiplication, and division.
2. Cooks and managers need to know how to determine how many portions a recipe makes, how to change a recipe to produce a different number of portions, and how to convert from U.S. to metric measurements.

Homework Activity: Writing

Math in Foodservice

How is math used in foodservice operations, both in the front of the house and back of the house. Write a one-page essay explaining your answer.

PAGES 276–279

STANDARDIZED RECIPES

Customized Instruction

Learning disabled	Have students choose a favorite recipe. Allow the student to circle the different parts of the recipe, as defined by the key terms. Conversion factor = Desired yield ÷ Original yield If a recipe serving 10 should serve 5: $5 \div 10 = 0.5$, which is the conversion factor If a recipe serving 16 should serve 20: $20 \div 16 = 1.25$ If a recipe serving 100 should serve 150: $150 \div 100 = 1.5$
Academically gifted	Pull several standardized recipes, and cross out various variables, such as yield and portion size. Have students practice using algebra to solve for the missing variables.

(continued)

ELL	Find or create images that represent the parts of the standardized recipe, using the pizza sauce recipe in Figure 14.13. Check for understanding by having the student connect the images with the parts of the recipe. Confirm yields: Allow students to make a batch of cookie dough where the portion size and yield are unknown. Break into groups, and allow students to make several cookies of different sizes using a 1-ounce, 2-ounce, 3-ounce, and 4-ounce cookie. How did the portion size affect the yield? Does it make a difference to over- or underscoop? Does the portion size match the pricing?
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Reinforce and Review

- A standardized recipe includes the recipe's name, ingredients, amounts required of each ingredient, recipe yield, portion size, temperatures required, time needed to prepare the recipe, equipment required, clear and easy-to-follow directions, and sometimes nutritional information.
- Recipes are road maps for cooks and should therefore be followed carefully.
- Recipes must be converted when the yield of the normal recipe is not the same (either larger or smaller) as the amount of product actually needed.
- To calculate a recipe's conversion factor, divide the amount of food desired by the amount of food yielded by the original recipe.
- Converting a recipe to yield a greater or lesser amount will often affect the equipment used and the cooking time.
- The feature Essential Skills: Formula for Increasing or Decreasing Recipe Yields explains the formula for increasing or decreasing recipe yields.
- Video: Standardized Recipes: This animation details the components of the standardized recipe, the name, yield, ingredients, portion size, temperature, time, and equipment, step-by-step instructions, and nutrition information.

Discuss

- Consistency, which includes using standardized recipes, is important to maintaining the restaurant's quality as well as to controlling costs. Does this mean that cooks and chefs must always measure each ingredient in a recipe, even if they have made the recipe multiple times before? Is "close enough" acceptable? What about the scope for personal creativity?
- How does the use of standardized recipes benefit the front-of-the-house employees and the guests they serve? What service-related problems can stem from failure to follow standardized recipes?

Vocabulary Review

- **Recipe:** A written record of the ingredients and preparation steps needed to make a particular dish.
- **Standardized recipes:** Recipes for institutional use, which must follow a format that is clear to anyone who uses them; a standardized recipe lists the ingredients first, in the order they are to be used, followed by assembly directions, or the method for putting the ingredients together.
- **Yield:** The number of servings or the amount a recipe makes.

- **Ingredients:** The food items needed to make a recipe, usually listed in the order in which they are used.
- **Portion size:** The individual amount that serves a person.
- **Temperature, time, and equipment:** In a recipe, this list includes the size and type of pans and other equipment needed, the oven temperature, cooking time, and any preheating instructions.
- **Nutrition information:** Information sometimes included with a recipe that may list the amounts of fat (saturated and unsaturated), carbohydrates, protein, fiber, sodium, vitamins, and minerals in the recipe.
- **Conversion factor:** The number by which to multiply the ingredients in a recipe in order to reach the new yield desired.

Homework Activity: Science

Altitude and Boiling Water

The temperature at which water boils varies depending upon the water's altitude. Find out your school's altitude and determine the boiling point at that level.

What is the boiling point at sea level? At 1,000 feet? At 5,000 feet? At 10,000 feet? Is the freezing point affected by changes in altitude? If so, how? Write a report on your findings.

In-Class Activity: Literacy

Know Your Numbers

Copy the units-of-measure equivalencies onto a note card for easy access when working in the kitchen.

In-Class Activity: Literacy

Measuring Cups

Practice using different liquid and solid measuring cups, working with milk and flour. What kinds of ingredients are easy to measure with this equipment? List as many as possible.

PAGES 280–282 U.S. AND METRIC MEASUREMENT SYSTEMS

Reinforce and Review

- The metric system of measurement is commonly used in other parts of the world and often appears in recipes, especially in baking.
- Important metric units of measurement in the foodservice industry include milliliters, liters, milligrams, grams, and kilograms.
- If the correct measurement equipment is available, recipes do not need to be converted from one system to another. Simply use metric equipment for metric recipes and customary equipment for customary recipes.

Discuss

- Accurate measuring is fundamental to following recipes, and therefore to determining the establishment's food costs. Encourage students to come up with examples of why accurate measuring is so important.
- Having two measurement systems in a single kitchen can give rise to confusion. What if an employee adds a kilogram of rice to the pot instead of a pound? Should a single measurement system be used? If so, which one? Encourage students to discuss potential pros and cons of each.
- Using both Fahrenheit and Celsius measurements in the same kitchen can lead to errors. Mistaking 39°C for 39°F, for instance, means the difference between a safe holding temperature and a potentially dangerous one—39°C is the equivalent of 102.2°F! Why should a kitchen use one system of measurement over the other?

Vocabulary Review

- **Metric units:** Units that make up the metric system, which is the standard system used in many parts of the world and also used by scientists and health professionals; metric units are based on multiples of 10 and include milliliters, liters, milligrams, grams, and kilograms.

Knowledge Check Answers (Page 282)

1. Components of a standardized recipe include: name, yield, ingredients, portion size, temperature, time, equipment, step-by-step directions, and nutrition information.
2. $\text{Desired yield} \div \text{Original yield} = \text{Conversion factor}$, which is the number by which to multiply the ingredients.
3. The converted amounts are 15 lb chicken, 7.5 lb scallions, 1 pt 14 fl oz soy sauce, 10 oz ginger, 5 lb green pepper, and 2.5 qt water.
4. The converted amounts are: (a) 240 ml, (b) 450 g, (c) 28 g, (d) 30 ml

Homework Activity: Math

Calculate Recipe Cost

A stew recipe serves 8. The EP amounts required to make the recipe are:

- 2 lb tomatoes (\$0.85/lb)
- 2 lb potatoes (\$0.99/lb)
- 1 lb eggplant (\$1.29/lb)
- 8 oz onion (\$0.35/lb)
- ½ oz garlic (\$0.35/lb)
- 1 lb carrots (\$0.99/lb)
- ⅛ oz kosher salt (\$1/lb)

Using the percentage yields in Table 14.6 on pages 286–287, calculate the recipe cost. Now convert the recipe.

Homework Activity: Math

Recipe Conversion

Convert the following recipe for 12 portions so that it yields 60 portions.

- 4 lb chicken
- 2½ lb scallions
- 6 oz soy sauce
- 4 oz ginger
- 2 lb green peppers
- 3 c water

Homework Activity: Math

Recipe Costing

Determine the total cost and the cost per serving for the following recipe. The yield is 26 servings.

- Chili
- 6 lb ground beef (\$3.39/lb)
- 5 lb tomatoes (\$1.69/lb)
- 4 lb onions (\$1.09/lb)
- 3 lb green pepper (\$1.59/lb)
- 8 oz garlic (\$2.59/lb)
- 12 oz tomato paste (\$1.79/pt)

PAGES 282–285 MEASURING AND PORTIONING

Customized Instruction

Learning disabled	Have students pair or work in small groups. Have students measure 1 cup of flour and then weigh 1 cup of flour. Write down results in a list. Create a list of various ingredients to test: white sugar, salt, brown sugar, eggs. What differences do students see? Create demonstrations of each key term by using the equipment to demonstrate the proper action. Perform skits or record video to present.
Academically gifted	Create a presentation to discuss the difference in measuring by volume and measuring by weight. Present to the class.
ELL	Match images of equipment used for measuring (in chapter 13) with the proper volume or weight measurement. Show students “at-home” recipes in comparison to professional standardized recipes (baking recipes are good and typically use weight for measurement). What is the difference? Make a list of observations and discuss in with the class.

Reinforce and Review

- Dry ingredients are usually measured by leveling them off evenly at the edge of the measuring utensil, although sometimes a recipe may call for a “heaping measure.”
- Liquid measuring cups are see-through and are marked along the side with various measurements, often both customary and metric.
- Weight is often measured in ounces, while volume is often measured in fluid ounces. Always correctly weigh an item and account for the weight of the container in which the item is being stored.
- Never measure ingredients by holding the measuring cup over the mixing bowl or other container being used to make the recipe.
- Essential Skills: Measuring Dry Ingredients demonstrates how to measure dry ingredients.
- Essential Skills: Measuring Liquids demonstrates how to properly measure liquids.
- Video: How to Measure Dry Ingredients: This video shows the proper way to measure dry ingredients.
- Video: How to Measure Liquids: This video shows the proper way to measure liquid ingredients.

Discuss

- How much does it matter to a recipe’s success if the measurements are off by just a little?
- Besides following standardized recipes and controlling portion sizes, what other roles do scales play?
- How can proper measurement affect a restaurant’s financial bottom line?

Vocabulary Review

- **Measurement:** Refers to how much of something is being used in a recipe.
- **Volume:** The amount of space an ingredient (or something else) takes up.
- **Weight:** The measurement of an item’s resistance to gravity.
- **Taring:** The process of accounting for the weight of an empty container on a scale by weighing the container and adjusting the scale until it reads zero before adding the food or item to be weighed.
- **Spring scale:** A scale that measures the pressure placed on a spring in order to weigh something. An example would be the hanging scales used in the produce department of grocery stores; weight is added to a “hanging scoop,” which pulls down and measures the pressure placed on the spring.
- **Balance beam:** With this scale, weights are placed on one end, and the product is placed on the other end until the beam balances. Scoops, counterweights, and pound measures are added to the scale, and ingredients are added to bring balance.
- **Baker’s scale:** Another name for the balance beam scale.
- **Electronic scale:** This scale measures resistance electronically and provides a digital readout.

- **Sifting:** A process that removes lumps from a dry ingredient and gives it a smoother consistency; shaking dry ingredients back and forth through a sieve forces clumps of soda to break apart as they pass through and prevents little clumps from remaining whole in the final product. In addition, sifting adds air to flour, making it lighter and fluffier, which is important for many recipes, especially cakes and light baked goods.

PAGES 286–288 | EDIBLE PORTION/AS PURCHASED AMOUNTS

Customized Instruction

Learning disabled	Show videos of butchers cutting and breaking down a large piece of meat. Note each time an item is discarded. Compare the beginning piece with the final piece to illustrate the difference between as purchased and edible portion.
Academically gifted	Allow the student to investigate yield, EP, and AP by testing hypotheses with several recipes. Record and analyze findings in a lab report.
ELL	Use a conversion chart to create visual representations of items. For example, draw a case of broccoli with 12 heads, and cross off the amount lost in trimming, according to the percentage.

Reinforce and Review

- To determine how much of an item is needed to yield an AP amount, divide the EP amount by the yield percentage.
- A conversion chart is a useful tool for managers, as it estimates shrinkage from AP to EP amounts.
- A butcher's test measures the amount of shrinkage that occurs when a meat product is trimmed.
- A cooking loss test measures the amount of shrinkage during the cooking process.
- If the product is both expensive to purchase and sold in high volume, then the product can be especially important to the food cost percentage, so the butcher's test and cooking loss test should be performed regularly.

Discuss

- How might restaurants decide whether to purchase convenience items with a higher price, or more labor-intensive products, or with a lower price but a higher labor cost? What types of restaurants might choose one or the other? What about combining the two?

Vocabulary Review

- **Edible portion (EP):** Amount of a food item left to be cooked and eaten after preparation such as trimming and cutting.
- **As purchased (AP):** Amount of a food item as it was purchased, before preparation such as trimming and cutting.
- **Conversion chart:** A list of food items showing the expected, or average, shrinkage from AP amount to EP amount.

- **Yield test:** A test that helps to determine the amount of product that will be produced after the required processing.
- **Butcher test:** Test used to measure the amount of trim loss, or “shrinkage,” that occurs during the trimming of a meat product, including deboning and removing fat and gristle.
- **Usable trim:** The trim that is removed from a product but that may be used in a different way than originally intended.
- **Nonusable trim:** The trim that is removed from a product and has no use in the restaurant.
- **Convenience food:** Food that is purchased already trimmed and cut, such as precut fries; the price of the item is higher, but prep time and labor cost may ultimately be lower.

In-Class Activity: Physical

AP/EP

Select a vegetable that is on the list on pages 286–287. Using at least three of the vegetables you select, perform a yield test on this vegetable to compare its AP and EP weights and thereby determine its yield percentage.

PAGES 289–292 COSTING RECIPES

Customized Instruction

Learning disabled	Students will work in small groups to weigh out the ingredients listed in Table 14.8. Review and copy the information from Tables 14.3, 14.4, and 14.5 to assist in visualizing the ingredients in the recipe, versus the as-purchased quantity (the amount sold in the quantity). For example, have students measure 1½ teaspoons of baking soda, and compare the container or case the item comes in. Use receipts or invoices for pricing. Find a recipe for brownies that uses volume measurements. Have students use the same pricing from Table 14.1, and work to convert all the items from measure by volume to measure by weight. Use scales to weigh items, and work together as a class to work through the problem.
Academically gifted	Practice converting favorite recipes to metric units of measurement, and then costing out portion sizes with another currency, like the Euro.
ELL	Create a poster with the ingredients listed in Table 14.1. For each item, show by drawing how the items may be converted into another unit. For example, show how 1 pound of chocolate becomes 16 ounces of chocolate by drawing 16 1-ounce pieces.

Reinforce and Review

- Standard recipe cost and standard portion cost are both important components in quantity food production.
- To find the total cost of a standardized recipe, a manager must know both the ingredient amounts needed and the market price for each one.
- Calculate the standard portion cost by dividing the total recipe cost by the recipe yield.

Discuss

- What is the difference between AP and EP?
- Why is the process of converting AP amounts into EP amounts necessary?

Vocabulary Review

- **Standard portion cost:** The cost per serving of food; dividing the total cost of a recipe by the yield provides the standard portion cost.

Knowledge Check Answers (Page 292)

1. A spring scale measures the pressure placed on the spring. With a balance beam, also called a baker's scale, the weight of the item is placed on one end, and the product is placed on the other end until the beam balances. Electronic scales measure resistance electronically.
2. The edible portion is the amount of a food item left to be cooked and eaten after preparation such as trimming and cutting. The as purchased amount is the amount of a food item as it was purchased, before any preparation.
3. The total cost is \$23.95 and the cost per serving is \$0.93.

PAGE 293

CASE STUDY FOLLOW-UP ANSWERS: "INTRODUCTION TO THE KITCHEN"

1. Chef Mike can assign Abby some math projects, ranging from basic mathematic operations to more complicated work, to help her become more comfortable with recipe conversion. It may also help to assure Abby that her math assignments, like her other tasks in the kitchen, will be overseen by management staff. If Abby miscalculates the recipe conversions, the errors will be corrected and Abby will receive extra assistance.
2. The process for changing a recipe for 18 into one that serves 150 will involve division and multiplication.

PAGES 293–294

CHAPTER ACTIVITIES ANSWERS

- **Spec Sheets:** Student answers will vary. Students should include a recipe for a peanut butter and jelly sandwich, a diagram of how it should be arranged on the plate (plating instructions), and a picture of the finished sandwich. Students can be creative.
- **Volume vs. Weight:** Students should calculate the weights of each ingredient and discuss why the volume and weight are or are not equivalent.

- **Calculating Recipe Cost:** The original recipe cost is \$5.03. The converted recipe cost is \$12.53. The new recipe cost is \$0.51.
- **Recipe Conversion:** The conversion factors are:
 - Salad dressing: 37.5
 - Barbecue sauce recipe: 9
 - Bun recipe: 3.75
 - Strawberry tart filling recipe: 18.75
 - Marinated vegetable recipe: 11.25
- **Recipe Cards:** Student answers will vary. The end result for each group of three students should be three recipe cards, each with eight ingredients, and each showing the recipe with a yield for six to eight people and for 20 people, using a conversion factor calculated by the students. Students should refer to the Essential Skills feature on page 278 for more information on converting the yields of recipes.
- **Culinary Education:** Students should research a variety of technology available to the foodservice industry to make the math-related tasks easier, including math related to recipes and recipe conversion, as well as other math a restaurant or foodservice operation might need to perform.
- **AP/EP in Action:** Student answers will vary. This activity should help students compare AP and EP amounts, and should emphasize to them how consistent cutting and trimming are important in order to accurately predict AP and EP amounts and plan for the true costs and amounts of items in recipes.

PAGE 295		EXAM PREP ANSWERS	
1. C (p. 282)		5. C (p. 284)	8. D (p. 287)
2. D (p. 281)		6. C (p. 280)	9. D (p. 274)
3. A (p. 276)		7. A (p. 285)	10. B (p. 273)
4. C (p. 282)			

Chapter 15

Teacher's Companion

CHAPTER OVERVIEW

This chapter presents salads and reviews the ingredients and types of salads, and covers various dressings and dips.

CHAPTER OBJECTIVES

- 15.1 Explain the roles of salads on the menu.
- 15.2 Identify and describe the various ingredients used to make salads.
- 15.3 List the four parts of a salad, and explain the role of each.
- 15.4 Identify and prepare various types of salad.
- 15.5 Identify procedures for cleaning and storing salad greens.
- 15.6 Differentiate among various oils and vinegars.
- 15.7 Prepare vinaigrettes and other emulsions.
- 15.8 Describe and prepare various common dips.

ADVANCE PREPARATION

Review	• Chapter 15, pages 300–329 • Unit case study, “Culinary Exploration,” pages 298–299 • Dip section, to coincide with an event, like the Super Bowl or another sporting event. Create a culinary challenge competition for teams to compete for the winning dip recipe and execution. • Essential Skills features for chapter. If possible, demonstrate or allow students to demonstrate as many skills as possible. Work with local grocery stores to perform demonstrations in the store in exchange for produce donations, for example.
Contact	• Chemistry or physics teacher for a laser beam or pointer • Computer lab • Foodservice director, for students to plan and execute a new salad bar or special featured salad item

(continued)

Prepare	• Blank cards for memory game • Pictures of greens and salad dressings and ingredients • Paper • Egg yolks, oil, and vinegar • Greens or vegetables from a field, still dirty • Various types of greens to see and taste • Various types of oils and vinegars to see and taste
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CHAPTER BREAKDOWN

PAGE 302

INTRODUCTION

Discuss

- Salads have quality expectations.
- Freshness is expected. Lack of freshness will be detected immediately by most guests.
- Emulsions and suspensions are the chemical aspects of dressings and dips.

PAGES 302–303

SALADS AND THE MENU

Customized Instruction

Learning disabled	Use a grocery store ad to find ingredients to clip to make for a salad. Assuming that the salad would serve a family of five, use the pricing on the ad to create and cost a salad menu for your family. Create a visual representation by pasting the ingredients and adding the pricing next to each item.
Academically gifted	Research the role of the salad in different cultures and service styles. What purpose does the salad serve throughout history? Describe your findings in an essay.
ELL	Search for recipes for each of the five types of salad. Measure out the <i>mise en place</i> for each item by finding or creating images of the ingredients, and attaching them to a graphic organizer or poster. Try to add in steps, like washing produce, or sanitizing stations, to visualize all the steps.

Reinforce and Review

- The five basic salads that can be served through the course of a meal are starter, accompaniment, main course, intermezzo, and dessert.
- Each type of salad serves a different purpose in the presentation of the entire meal.
- The *mise en place* for making salad includes preparing the fresh vegetables for the peak of ripeness and freshness.

Discuss

- What are the five basic salad types?
- What is the definition of a salad?

Vocabulary Review

- **Starter salad:** Served as an appetizer to the main meal, a starter salad is smaller in portion and consists of light, fresh, crisp ingredients to stimulate the appetite.
- **Accompaniment salad:** Also known as a side salad, an accompaniment salad is served with the main course of the meal and should be light and flavorful, but not too rich; the side salad should balance and complement the main course.
- **Main-course salads:** Salads large enough to serve as a full meal that also contain protein ingredients, such as meat, poultry, seafood, egg, beans, or cheese, and that provide a well-balanced meal, both visually and nutritionally. The main-course salad is a menu staple for many restaurants, and such salads range from the very traditional chef's salad, containing mixed greens, raw vegetables, strips of meat, and cheese, to very popular Caesar salads with grilled chicken or shrimp.
- **Intermezzo salad:** This light salad is intended to be a palate cleanser after a rich dinner and before dessert. Often served in classic French meals, the intermezzo salad refreshes or stimulates a person's appetite for the dessert or next course.
- **Dessert salads:** This salad is usually sweet and often contains fruits, sweetened gelatin, nuts, cream, and whipped cream; dessert salads are often too sweet to be served at any other point in the meal.

PAGES 304–307

SALAD INGREDIENTS

Customized Instruction

Learning disabled	For each ingredient listed on page 304 as traditional salad ingredients, create or find an image. Cut the image out and paste onto flash cards, with the name on the back. Create image cards with the types of salad greens in Table 15.1, with the name on the back. Practice creating new salad combinations with the cards, making a list of the options.
Academically gifted	Research the cost of purchasing an indoor growing operation. What types of systems are there? Cost? What types of greens can be grown? What is the growing time? Search online for grants and create a presentation for why an indoor growing operation can enhance your study. Work with your instructor to apply for a grant.
ELL	Taste as many greens as can be supplied by the instructor. Take notes on flavor profiles. Create three different salads by drawing images of the ingredients, based on a particular flavor profile you enjoy the most.

Reinforce and Review

- Greens are leaf vegetables. In most salads, greens are used raw.
- Salad greens come in a variety of colors like light green, dark green, and red.
- There are hundreds of varieties of lettuce.

Discuss

- What kind of vegetables can you add to a salad?
- How can you ensure high quality in a salad?

Homework Activity: Math

Salad Limiting Factor

Students will come to understand that fresh ingredients are important for salads.

Freshness varies from ingredient to ingredient. So does shelf life. The most delicate ingredient is the “limiting factor” in the timeline of salad ingredient receiving and storage. The salad must be made while the most delicate ingredient is still fresh.

Have the students consider the limiting factor. What is it? What does it mean? Assign students to each choose a salad recipe. Have them identify the most delicate ingredient, the limiting factor. Have them specify the receiving, storage, and handling guidelines of their limiting-factor ingredient.

Customized Instruction

Learning disabled	Use paper or cardboard, and build a 3-D model of the four basic parts of the salad, as listed on page 308 in Table 15.2.
Academically gifted	Create a video on how to design an attractive salad, using the four basic parts of the salad, as listed on page 308 in Table 15.2.
ELL	Using real or images of ingredients (or models), demonstrate how to build a salad. Make sure to point out all four parts. If filming a demo, the activity can be done as a homework assignment.

Reinforce and Review

- The four basic parts of a salad are the base, body, dressing, and garnish.
- Garnish may be a signature part of the salad. For example, a Crab Louis seafood salad is often garnished with a sliced beet cut into the shape of a flower or star.
- Crumbled hard-cooked egg yolk is often used to garnish a spinach salad.

Discuss

- Can the students think of any other examples of garnishes?
- Are there any classic and popular restaurant salads that are always garnished the same way?

Vocabulary Review

- **Base:** Usually a layer of salad greens that lines the plate or bowl in which a salad will be served.
- **Body:** Part of a salad that consists of the main ingredients, which can be a mixture of vegetables, such as lettuce, tomatoes, carrots, etc.; meats, such as turkey breast or ham; or cheeses and various fruits, such as mandarin oranges or apples.
- **Salad dressing:** A liquid or semiliquid used to flavor salads; the dressing acts as a sauce that holds the salad together, and can range from mayonnaise for potato- or macaroni-based salads to vinaigrettes for lettuce-based salads. Sometimes dressings are called cold sauces because their purpose is to flavor, moisten, and enrich food.
- **Garnish:** Something added to enhance the appearance of food while also complementing the overall taste; it should be something that will be eaten with the food, functioning as a flavor component. “Garnish” is also used as a verb, meaning to apply a garnish to food.

PAGES 309–316

TYPES OF SALAD

Customized Instruction

Learning disabled	Create a video or in-class demonstration for the Essential Skills feature Designing an Attractive Salad, Preparing Vegetable Salads, Preparing a Green Salad, Preparing Bound Salads, Preparing Gelatin Salads, or Preparing Fruit Salads. This activity can be repeated or chunked, as needed.
Academically gifted	Choose or design a recipe for each category of salad. Write a standardized recipe, including all <i>mise en place</i> steps for safety and sanitation, along with a cost analysis.
ELL	Watch a video for each type of salad described in the Essential Skills features for the section (Designing an Attractive Salad, Preparing Vegetable Salads, Preparing a Green Salad, Preparing Bound Salads, Preparing Gelatin Salads, and Preparing Fruit Salads). Watch the demo from the performer, and pause to copy down the recipe, steps, and other details. Write out the recipes and pair with images. Choose one recipe (or multiple recipes, if possible) to demonstrate in the lab.

Reinforce and Review

- Salad is a combination of raw or cooked ingredients that are served cold or warm.
- The main types of salad are tossed and composed, bound, vegetable, fruit, and combination.
- Essential Skills: Designing an Attractive Salad lists how to design an attractive salad. Freshness, color, composition, dimension, and presentations are all factors in the attractiveness of a salad.

- **Essential Skills: Preparing Vegetable Salads** details how to prepare a vegetable salad. Cooked or raw, color and texture are very important to vegetable salads.
- **Essential Skills: Preparing a Green Salad** explains how to prepare a green salad. A salad should be easy to eat with a fork and not require a knife if at all possible.
- **Essential Skills: Preparing Bound Salads** explains how to prepare a bound salad. All ingredients should be salad-ready before beginning to assemble the salad. Pasta or potatoes should be cooked and chilled before assembling the salad. Dressing should be carefully folded into ingredients. A bound salad should not appear mashed or gluey.
- **Essential Skills: Preparing a Gelatin Salad** lists the steps in preparing a gelatin salad. Gelatin should be dissolved in a separate container than it is set in.
- **Essential Skills: Preparing Fruit Salads** lists the steps in preparing a fruit salad.

Discuss

- Have the students discuss the examples of each type of salad.
- Can students think of an example of each type of salad?
 - Tossed: Caesar
 - Composed: Cobb
 - Bound: Potato
 - Vegetable: Coleslaw
 - Fruit: Tropical fruit cocktail
 - Combination: Tomato salad with a scoop of tuna
- What salads can be used for a main dish?
- Which salads are best for a side salad or first course?

Vocabulary Review

- **Tossed/Composed salad:** After all ingredients are individually prepared, a salad is either tossed or composed. In a tossed salad, the ingredients are simply mixed, or tossed, together prior to plating. For a composed salad, the ingredients are arranged on the base separately to create the desired taste experience and achieve a high level of visual appeal.
- **Bound salad:** This type of salad is prepared from cooked primary ingredients such as meat, poultry, fish, egg, potato, pasta, or rice bound together with some type of heavy dressing such as mayonnaise.
- **Vegetable salad:** This type of salad is prepared from cooked and/or raw vegetables and either bound with a heavy dressing or tossed with a lighter dressing.
- **Fruit salad:** A salad prepared from fruit using a slightly sweet or sweet/sour dressing to enhance the flavor.
- **Combination salad:** A salad that incorporates a combination of any of the other four salad types (tossed or composed green, bound, vegetable, and fruit).

Homework Activity: Writing

Nontraditional Salads

Meat salads? In Germany, a dish called Fleischsalat (meat salad) is made of strips of cold sausages similar to bologna, mixed together with pickles and bound with mayonnaise. It is served cold with bread and sliced cheese.

Wilted salad? Bacon, sugar, and vinegar recipes can make a glaze dressing in a sauté pan. While the glaze is warm, some spinach leaves can be very quickly tossed in it and then plated with bacon, warm goat cheese, nuts, or other ingredients for a wilted salad.

Students should brainstorm and research different types of nontraditional salads and write a one-page essay answering the following questions:

1. What is actually defined as a salad?
2. What are the limits of the definition?
3. How can salads be altered slightly to accommodate guests?

In-Class Activity: Literacy

Salad Memory Game

There might be many types of salad greens that are new to the students. Not every teenager is familiar with radicchio, arugula, or other greens.

Help the students to create a memory game of the greens. Divide the number of greens by the number of students. Have each student or team work on the same number of greens.

Have the student or team make a card for each green. It should have a picture of the green and a brief description of the green. Use every example from Table 15.1.

Make a second identical set. There will be two cards for each green. Combine the sets of cards. Shuffle them and spread them out face-down in a grid. This is like a memory game or concentration. Have students turn over two cards, attempting to find a match. If the two do not match, turn them face-down again. It is now another student's turn.

If the two match, the student takes the pair and shows the card picture to the class. The student then reads the description aloud to the class. Successful pairing gives the student another turn.

The game gets easier as it progresses. Score it however you choose.

PAGES 316–317**CLEANING AND STORING GREENS****Customized Instruction**

Learning disabled	Use the steps in the Essential Skills feature on page 317 to create or find images that describe each step. Screenshots of videos demonstrating the skill may be helpful.
Academically gifted	Why is washing produce important—in particular, greens? Perform research and give a visual presentation to the class. Focus on foodborne-illness outbreaks, use of chemicals or pesticides, and insects.
ELL	Find and watch a video of a chef cleaning greens. Write down the steps that you see. Compare to the Essential Skills steps listed on page 317. Which steps are the same? Which are different? Are any missing? Write a short summary of what you found.

Reinforce and Review

- Prepackaged greens might seem ready to serve, but even these need rinsing before serving. They are flushed and gassed with chemicals that preserve them a bit longer than otherwise.
- Salad greens need careful handling. It is important to completely clean greens without wilting them with too much water.
- Properly storing greens actually improves their crispness.

Discuss

- Why is it important to clean greens before use?
- Why is it important to store greens properly?

Knowledge Check Answers (Page 317)

1. The five basic types are green, bound, vegetable, fruit, and combination.
2. The four parts are base, body, garnish, and dressing.
3. The kinds of salad are starter, accompaniment, main course, intermezzo, and dessert.
4. Freshness and limiting factors will influence when food can be served.
5. Salad greens are best stored at between 36°F and 41°F (2°C and 5°C).

Homework Activity: Science**Research MAP**

Modified atmosphere packaging (MAP) is a process of preparing foods, including salad greens, for shipment and storage. Have students investigate this process. Why is it important? Is it a widespread practice in the United States?

Students should write three paragraphs about the process, to the extent of their understanding of the science.

Customized Instruction

Learning disabled	Use a map of the world, and create a poster to show where the different types of oil and vinegar come from, using Table 15.3 to guide your online research. If possible, find several types of oils and vinegars for students to taste. Look up recipes for four dressings. What category are they? Use the key terms to match the recipe with the dressing type.
Academically gifted	Look up the recipe and method for making mayonnaise from scratch. Write out the <i>mise en place</i> plan, including a list of ingredients to purchase (with costing). In class or at home, make the mayonnaise by hand. Research the art of olive oil and vinegar tasting. How is this done? Present your findings to the class.
ELL	Find videos that define the terms vinaigrette dressing, suspension, emulsified vinaigrette, and emulsifier. Write down some descriptions of what you see to match the textbook definitions.

Reinforce and Review

- Viscosity is the thickness of a liquid, which affects the flow of that liquid. The viscosity of a dressing should match the needs of the salad. A very thick dressing does not work for a very light, tender green like Bibb lettuce. The mouthfeel of a thick dressing is different than that of a thin dressing.
- Mayonnaise is as safe as its ingredients. However, because pathogens can grow in mayonnaise, proper handling is crucial.
- The weight of the dressing determines the weight of the ingredients it can dress.
- A thick, stable dressing can bind potatoes, chicken, or other foods. If bound properly, a bound salad can be scooped.

Discuss

- How can dressings identify a salad?
- What are the primary dressings for a salad?
- What is the difference between a suspension and an emulsifier?

Vocabulary Review

- **Vinaigrette dressing:** In its simplest form, this dressing is made of oil and vinegar. Vinaigrettes are lighter, thinner dressings often used on more delicate ingredients, such as greens and vegetables. The standard ratio for a basic vinaigrette is three parts oil to one part vinegar. Acidic juices like lemon, lime, or orange juice can be substituted for part or all of the vinegar. When shaken together, the ingredients form a suspension.

- **Suspension:** A temporary mixture of ingredients that eventually separates back into its unique parts. For example, the ingredients in vinaigrette will separate after nonuse but can be remixed before service.
- **Emulsified vinaigrettes:** A vinaigrette that has gone through the emulsion process (using an emulsifier), creating a mixture of ingredients that permanently stays together, unlike a suspension, which eventually separates.
- **Emulsion:** A mixture of ingredients that permanently stays together, unlike a suspension, which eventually separates.
- **Emulsifier:** An ingredient that can permanently bind dissimilar ingredients, such as oil and vinegar, together on a molecular level. Egg yolks contain lecithin (an effective emulsifier) and can bind oil and vinegar together permanently, so these three ingredients make up the base of many emulsified vinaigrettes.

In-Class Activity: Physical

Emulsifiers

Oil doesn't mix with water. It is called "hydrophobic," or afraid of water. Vinegar is a water solution of an acid. Acid mixes just fine with water. It's called "hydrophilic," or water-loving.

There are molecules that are lipophilic, or lipid-loving, and that can mix just fine with oil. The other end of the same molecule is hydrophilic, and can mix with water. These molecules are emulsifiers. They can emulsify, or mix, lipid and water—oil and vinegar. Think of them as helping hands or negotiators.

One such emulsifier is soap. No one wants to eat soap or make salad dressing from it. But it cleans grease off skin by connecting its lipophilic end with grease and making it water soluble with the hydrophilic end. Grease is removed with all the bubbles and water.

Teach this lesson about emulsifiers. Then have the class or groups make emulsified vinaigrette, mayonnaise, or both. Assess their success in the kitchen lab as you usually do.

PAGES 320–321

PREPARING VINAIGRETTES AND EMULSIONS

Reinforce and Review

- Mayonnaise is as safe as its ingredients. However, because pathogens can grow in mayonnaise, proper handling is crucial. Why is it important to use pasteurized eggs for things like Caesar dressing?
- Video: How to Make a Vinaigrette Dressing: This video reviews the steps in the Essential Skills feature on page 321 to show how to make a basic vinaigrette.
- Essential Skills: How to Make Emulsified Vinaigrette Dressing lists the steps for making an emulsified vinaigrette dressing.
- Essential Skills: How to Make Mayonnaise lists the steps in making mayonnaise.

Discuss

- Which greens would you use with vinaigrette, emulsified vinaigrette, mayonnaise-based, and mayonnaise dressings?

Vocabulary Review

- **Mayonnaise:** The thickest and most stable emulsified dressing, mayonnaise contains a higher ratio of oil to vinegar and a greater quantity of egg yolks than is required for emulsified vinaigrette.
- **Mayonnaise-based dressings:** This type of dressing is typically creamy, such as Russian, Thousand Island, and blue cheese dressing, and is often thicker than an emulsified vinaigrette (but not always).

PAGES 322–323

DIPS

Customized Instruction

Learning disabled	Make a list of your favorite dips. Watch video clips of cooking demonstrations of a few of your favorites, and pause often to write down the method, recipe, and <i>mise en place</i> .
Academically gifted	Research the history of dips in different cuisines and cultures worldwide.
ELL	Try writing a recipe based on the Essential Skills feature for making a simple cold dip. What types of variations could you make by substituting different ingredients and flavor profiles? What should be served with the dips?

Reinforce and Review

- Dips usually have increased viscosity for being carried on chips, vegetables, and crackers.
- A dip should not be gluey, gloppy, or runny.
- Essential Skills: Making a Simple Cold Dip lists the steps in making a cold dip. Cold dips should be cold, but not frigid.

Discuss

- What is a dip?
- What types of chips and dips do students see at parties?
- What are some popular ethnic dips?

Vocabulary Review

- **Dip:** A flavorful mixture that accompanies certain food items and is meant to complement or enhance a food's flavor. Depending on their ingredients and purpose, dips can be served hot or cold, and many cold dips can be thinned for use as salad dressings.

Knowledge Check Answers (Page 323)

1. Student answers will vary, but students should use Table 15.3.
2. The primary types of salad dressing are vinaigrette, emulsified vinaigrette, mayonnaise-based, and mayonnaise.
3. A suspension is a temporary mixture of ingredients that eventually separates back into its unique parts.
4. An emulsion is a mixture of ingredients that permanently stays together, unlike a suspension, which eventually separates. In order to create an emulsion, you need an emulsifier. An emulsifier is an ingredient that can permanently bind dissimilar ingredients, such as oil and vinegar, together on a molecular level.
5. Oil, vinegar, and egg yolk are the three main ingredients in mayonnaise.
6. Dips from Mexico mentioned in the chapter include: guacamole, salsa, queso.

PAGE 324

CASE STUDY FOLLOW-UP ANSWERS: “CULINARY EXPLORATION”

1. Student answers will vary, but students should reference the five types of salad on page 309.
 - Here are some selections of salads:
 - Starter salad (appetizer): Caprese (vine-ripe tomatoes, fresh mozzarella, fresh basil, extra-virgin olive oil, coarse salt and pepper)
 - Accompaniment salad (side salad): Rice salad (brown rice, red onion, celery, cranberries, balsamic vinaigrette salad dressing)
 - Main course: Chef’s salad (salad greens, ham, turkey, green onion, celery, cherry or grape tomatoes, Swiss cheese, cheddar cheese, two eggs, bacon bits, salad dressing)
 - Intermezzo salad: Fruit salad (blueberries, mandarin oranges, strawberries, green grapes, low-fat plain Greek yogurt, honey, orange juice)
 - Dessert salad (crushed pineapple, pistachio pudding, whipped topping, bananas, marshmallows, fruit cocktail, mandarin oranges)
2. Student answers will vary, but students should reference the dips listed on page 322.
 Healthy appetizers could include baba ghanoush, pear and pistachio guacamole, kale chips, feta and olive skewers, Greek yogurt dip and vegetables.

PAGE 325

CHAPTER ACTIVITIES ANSWERS

- **Oil Salesperson:** The name “canola” means “Canada oil.” It is made from the rapeseed crop, but rapeseed is not a good marketing name, even though the oil is good. It is raised in the farmlands of Alberta and other regions in the Canadian plains and in the United States and Australia.
- **Do Oil and Vinegar Mix?:** Student answers will vary. Mustard, honey, and molasses can be added to act as emulsifiers with varying consistencies/thicknesses.

- **The Cost of Cobb Salad:** The students need to know all the ingredients in a Cobb salad and their portion sizes. Classic ingredients are lettuce, bacon, blue or Roquefort cheese, tomatoes, chicken, hard-cooked eggs, avocado, and chives with a vinaigrette dressing.
- **It's a Classic:** Each group will learn new salads. The more the students learn about various salads, the better.
- **Grow Your Veggies:** Student answers will vary. Students can research local farms and suppliers online, and look into farms and sources from local farmers' markets. If there is a local operation a student knows that uses local suppliers for produce, the student can contact that operation to see how they do it.
- **The Main Event:** Student answers will vary. Students should come up with three healthful main-course salads. Students can refer back to the description and examples of main-course salads found on page 303.

PAGE 326**EXAM PREP ANSWERS**

1. D (p. 309)

5. A (p. 309)

8. C (p. 318)

2. A (p. 308)

6. A (p. 303)

9. D (p. 322)

3. C (p. 308)

7. B (p. 317)

10. C (p. 319)

4. D (p. 304)

Chapter 16

Teacher's Companion

CHAPTER OVERVIEW

This chapter covers the types of sandwiches, primary sandwich components, sandwich stations, and pizza.

CHAPTER OBJECTIVES

- 16.1 Give examples of different types of sandwiches, including simple hot, open-faced, tea (or finger), grilled, deep-fried, and simple cold.
- 16.2 Explain the roles of the three components of a sandwich: bread, spread, and filling.
- 16.3 List the components of a sandwich station.
- 16.4 Prepare several types of sandwiches.
- 16.5 Give examples of different styles of pizza.
- 16.6 Prepare various types of pizza.

ADVANCE PREPARATION

Review	• Chapter 16, pages 330–349 • Unit case study, “Culinary Exploration,” pages 298–299
Contact	• Baker or bread company • Grocer, deli, or cheese shop • Local manager from a sandwich-focused restaurant • Local manager or owner from a pizza-focused restaurant
Prepare	• Recipes and ingredients to demonstrate various sandwiches and pizzas

CHAPTER BREAKDOWN

PAGE 332

INTRODUCTION

Discuss

- Help the students understand how important sandwiches are to the lunch trade.
- There are classic and basic rules about sandwiches.
- There are traditional main ingredients that serve functional purposes beyond just flavor.
- Sandwiches can be built efficiently at a station equipped with necessary equipment and foods, like a *mise en place* for sandwiches.

PAGES 332–334

BASIC KINDS OF SANDWICHES

Customized Instruction

Learning disabled	Sandwich war! Build a pro and con list for cold and hot sandwiches. Divide the class into teams to debate the greatest sandwich of all time (or just hot versus cold).
Academically gifted	Research the history of the word “sandwich.” Where does it originate? Write a brief statement and share with the class.
ELL	Find images to match the different types of cold and hot sandwiches described on pages 333–334. Look for recipes to match the images, and create a <i>mise en place</i> plan to make each one.

Reinforce and Review

- Sandwiches are usually handheld, but not always. Some hot sandwiches, such as an open-faced hot turkey sandwich, are eaten with a fork and knife.
- Some bread, flat bread, or crust component is universal to a sandwich-type item.
- Hamburgers and hot dogs are hot sandwiches, and pizza is a hot open-faced sandwich.
- Tea sandwiches have a light filling such as cucumbers, watercress, egg salad, or a light ham salad with celery.

Discuss

- Ask the students what they had for lunch yesterday. Chances are a few will say “sandwich.” Help the students to see that many of their favorite handheld food items are really based on the sandwich concept.
- Why is it better to prepare sandwiches to order than in advance?

Vocabulary Review

- **Cold sandwich:** Sandwich that consists of two slices of bread or two halves of a roll, a spread, and a filling. The choices for fillings are many, the most common being meat and cheese or a salad, such as egg salad or tuna salad.
- **Submarine sandwich:** This usually refers to a cold sandwich served on a long, sliced roll with one or more types of cheese, meat, lettuce, tomato, onion, and various other toppings. These sandwiches may also be referred to as subs, grinders, heroes, or hoagies. In some instances, the filling may be hot, such as in a meatball sub.
- **Wrap sandwich:** A sandwich made on any type of flat bread—for example, tortillas, pita bread, cracker bread, or rice-paper wrappers—spread with a hot or cold sandwich filling and rolled up.
- **Pita:** A flat bread that can be opened to form a pocket for ingredients.
- **Multidecker sandwich:** A sandwich that has more than two slices of bread (or roll), with several ingredients in the filling. The club sandwich is one example of a multidecker sandwich.
- **Club sandwich:** This sandwich traditionally consists of three slices of toasted bread spread with mayonnaise and filled with an assortment of sliced chicken and/or turkey, ham, bacon, cheese, lettuce, and tomato.
- **Open-faced sandwich:** A sandwich with only one slice of bread, without a second slice on top of the fillings.
- **Canapé:** A version of the open-faced cold sandwich that is a type of hors d'oeuvre (bite-sized finger food item served before a meal).
- **Hors d'oeuvres:** The cold or hot bite-sized finger food items that are served before a meal.
- **Hot sandwich:** Sandwich that is heated in some way and served hot.
- **Grilled (or toasted) sandwiches:** This type of hot sandwich is made by placing a filling between two pieces of bread, buttering the outside of the bread, and browning it on the griddle or in a hot oven. Grilled cheese, grilled ham and cheese, and tuna melt (grilled tuna salad and cheese) are popular varieties.
- **Panini:** Sandwiches made by grilling them on a panini press, which compresses the sandwich and warms the ingredients without adding additional fat to the outside of the sandwich.
- **Deep-fried sandwiches:** These are made by dipping the filled sandwich in beaten egg batter (sometimes then coating it with bread crumbs) and deep-frying it. One example of a deep-fried sandwich is a Monte Cristo, which is filled with turkey or chicken breast, ham, and Swiss cheese.

In-Class Activity: Physical

The Name Game

Students will learn the names of classic sandwiches. Find a soft ball or beanbag for the students to toss.

Have each student in the room adopt the name of a classic sandwich: Monte Cristo, club, Reuben, BLT, patty melt, grilled cheese, hamburger, hot dog, pizza, calzone, PB&J, egg salad, Philly cheesesteak, French dip, and any other classic names you can think of. Once a student has a name, have that student compose a one-line description of that sandwich.

Arrange students in a circle. The student with the ball introduces him or herself by saying the name of the sandwich and the description: "Hello! My name is _____ (name the sandwich), and I am a _____ (description)."

The student then tosses the ball to another student who must reply: "Hello _____ (whichever the last sandwich was). It's nice to meet a (describe the last sandwich). My name is _____ (his or her sandwich name), and I am a _____ (description)."

Continue around the room until each person has caught the ball. After each has been introduced, keep going as the game goes faster and faster. At the end, quiz the students to see if they remember the descriptions that go with the names.

In-Class Activity: Math

Peanut Allergies in the United States

Students should look up "peanut allergy" on *MayoClinic.com* or another reliable medical information site.

Have them research statistics for the increase in peanut allergies in the last 20 (or so) years using data from the U.S. Centers for Disease Control or another reliable source.

What do the statistics mean? Have the students describe verbally what the percentage increases are. Evaluate students' understanding of statistical percentages and their math literacy about percentages. If they do not understand percentages, encourage them to improve their math skills before they advance to further chapters in this text that will require such math skills.

In-Class Activity: Math

Totaling a Sandwich’s Calories

Choose two sandwiches from the list of classic sandwiches the students learned for the Name Game activity earlier in this chapter.

Have the students research the calorie content of each ingredient in the sandwich. Using this data, have the students add the calories together for a total calorie content of the sandwich.

Please keep in mind that calories must be added for oil or butter if a sandwich is buttered before grilling (like a grilled cheese), or if it is deep-fried (like a Monte Cristo).

Customized Instruction

Learning disabled	Pizza war! Debate the different variations of pizza (New York versus Chicago versus Neapolitan). Present pros and cons of each type, or divide the class to debate.
Academically gifted	Research the various regional spins on pizza throughout America, outside of the three main types mentioned on page 335. Create a presentation to add to the pizza debate.
ELL	Find images and recipes for each type of pizza. Write a paragraph describing the type you like the best. Be sure to mention your favorite toppings and restaurant.

Reinforce and Review

- Pizza is a dish made typically of flattened bread dough spread with a savory mixture usually including tomatoes and cheese and often other toppings and baked.

Discuss

- Pizza is such a ubiquitous food item in the United States today that it almost is a food category unto itself. Ask the students to discuss their favorite type of pizza. Many of the students will have strong opinions about this topic. Limit the discussion to fit the time allowed.
- How has pizza changed from its early beginnings? Is it still considered street food or food for the less wealthy? What do you think of when you think of pizza?

Vocabulary Review

- **Pizza:** A hot, open-faced Italian pie with a crisp yeast dough bottom that is baked with flavored or seasoned sauce and additional toppings, such as cheese, meat, and vegetables. Pizza comes in a variety of crusts, such as thin, thick, and pan, and with a tremendous variety of toppings and sauces. Pizzas can be wood-fired, roasted, or kiln-baked, and pizza styles differ across the country.

Knowledge Check Answers (Page 335)

1. All sandwiches fall into one of two general categories—hot (grilled cheese) or cold (tuna salad).
2. A club sandwich is an example of a multi-decker sandwich.
3. Hors d'oeuvres are the cold or hot bite-sized finger food items that are served before a meal.
4. Three styles of pizza are Chicago-style, New York-style, and Neapolitan-style.

Homework Activity: Writing

Origin of Pizza

Pizza used to be fairly standard fare: dough, tomato sauce, cheese, and maybe an additional topping or two. But in recent years, pizza has become one of the most versatile food items in the world.

Research one specific aspect of this diverse food. Look into its origins, regional differences, sauces, toppings, latest trends, types of crust, cooking methods, etc. Then write a report on what you find.

PAGES 336–337 PRIMARY SANDWICH COMPONENTS: BREAD, SPREAD, AND FILLING

Customized Instruction

Learning disabled	Build a 3-D diagram of a sandwich with the three components, bread, spread, and filling, all highlighted.
Academically gifted	Design a menu for a sandwich shop using variations of the ingredients listed in Table 16.1. Price out each sandwich using a recent invoice or pricing provided by the instructor.
ELL	Draw or find images of the primary sandwich components in Table 16.1 on page 337. Match the component with the category: bread, spread, or filling.

Reinforce and Review

- Mayonnaise-type salad dressing spreads are usually thickened with starch rather than emulsified by an egg, which changes the performance and the flavor a little bit. They can make bread a bit soggy than mayonnaise if sandwiches need to be held refrigerated for a long period of time. However, they are still oil based and can serve as a barrier. Some individuals prefer these spreads to mayonnaise.
- Because sandwiches are considered handheld and easy to eat, the accompaniments are often easy to eat as well. French fries are handheld. Potato salad and coleslaw can be eaten easily with a plastic fork for a picnic or take-out lunch. Although definitely not handheld, soup is often paired with sandwiches for a lunch menu.
- Video: How to Make a Basic Sandwich: This video focuses on how to make a sandwich, using the three basic components.

Discuss

- What is the difference between a spread and a filling?
- What are some primary sandwich components?
- There are several traditional layering condiments that can be included with a sandwich, and each can serve a purpose. Ask the students to discuss the function of onion slices, tomato slices, pickle slices, and lettuce leaves.

Vocabulary Review

- **Bread:** A basic component of a sandwich that serves as an edible container for the food inside and also provides bulk and nutrients. Popular breads include sliced white bread (still the most frequently used sandwich bread), hard rolls, pita bread, French bread, tortillas, flatbreads, multigrain bread, and cinnamon-and-raisin bread. Many restaurant and foodservice operations also offer a variety of whole wheat, marbled rye, and nonwheat or gluten-free breads.
- **Pullman loaves:** Sandwich loaves of sliced white bread, which is still the most frequently used sandwich bread.
- **Spread:** Item smeared onto the bread of a sandwich that serves three main purposes—to prevent the bread from soaking up the filling, to add flavor, and to add moisture. Butter and mayonnaise are the most common spreads.
- **Filling:** The main attraction of a sandwich; the purpose of the filling is to provide the primary flavor to the sandwich. Fillings can vary from sliced or grilled meat and cheeses to salad mixtures such as egg or tuna salad.

Knowledge Check Answers (Page 337)

1. The basic components of a sandwich are bread, spread, and filling. While bread serves as an edible container for the food inside, it also provides bulk and nutrients. Pullman loaves, sandwich loaves of sliced white bread, are still the most frequently used sandwich bread, and are an example. A spread serves three main purposes—to prevent the bread from soaking up the filling, to add flavor, and to add moisture. Butter and mayonnaise are the most common spreads. The filling of the sandwich is the main attraction. The purpose of the filling is to provide the primary flavor to the sandwich. Generally, the filling is protein based, but it doesn't have to be. Vegetable-based sandwiches are popular today, such as Caesar salad wraps or Portobello sandwiches. Fillings can vary from sliced or grilled meat and cheeses to salad mixtures such as egg or tuna salad. The filling may be sliced, ground, blended, or tossed—any form that fits the type of sandwich being prepared. The flavors of a sandwich are limited only by the creativity of the sandwich cook.
2. The filling of the sandwich is the main attraction. The purpose of the filling is to provide the primary flavor to the sandwich.
3. A spread serves three main purposes—to prevent the bread from soaking up the filling, to add flavor, and to add moisture.

Homework Activity: Science

Stale Bread—When Does It Become Unsafe?

When bread is stale, it is beginning to lose quality but is still safe. At some point, bread will begin to grow mold.

What does stale mean? Is it a quantifiable word, or just a description?

What day does mold begin to form? Is mold visible as soon as it has begun to grow? Should day-old bread be eaten? How about week-old bread? When should it be discarded?

Students can perform their research online or by contacting a bakery.

Students can draw a timeline of the quality and safety of one type of bread (brand specific is fine).

Specifically tell the students not to sample a taste of moldy bread. Moldy bread should be discarded, wrapped, in an outside garbage container. Do not handle moldy bread with bare hands. Mold spores are thought to be potentially carcinogenic or in other ways harmful to humans.

PAGES 338–342

SANDWICH STATIONS

Customized Instruction

Learning disabled	Design a sandwich station based on the ingredients and equipment found on page 338. Draw a map with images for all the ingredients and pieces of equipment. For LD and ELL: Allow students to create video demos for all Essential Skills features—Making a Sandwich, Making a Club Sandwich, Guidelines for Making Canapés, Tips for Keeping Bread Fresh, and Making Basic Pizza.
Academically gifted	Design a menu for an event focused on canapés, using the Essential Skills feature for guidelines listed on page 341. Research various ways to plan based on the number of items for each guest. And a twist: all trays must be clearly labeled with all allergens for this client. Put together mock-up drawings for presentation, and include recipes and pricing. What other questions should be answered when presenting a quote to a potential customer?
ELL	Create a “do and don’t” comic book or drawing on sandwich and pizza presentation. Watch a few cooking demo videos for ideas.

Reinforce and Review

- A well-supplied sandwich station depends on the operation’s menu and available equipment and space.
- Portion controls are a house concern, not a guest concern. Measure meat or cheese by weight before guests are involved. Do not allow guests to see the house removing meat or cheese from a portion, as this does not appear generous. Specific-sized scoops can portion salad fillings like tuna.
- Video: How to Make a Pizza: This video features the *mise en place* for preparing a pizza from scratch.

- Essential Skills: Sandwich and Pizza Presentation explains how to present sandwiches and pizza to customers.
- Essential Skills: Making a Sandwich highlights the primary components of a sandwich (bread, spread, and filling).
- Essential Skills: Cutting a Club Sandwich demonstrates how to properly cut a club sandwich.
- Essential Skills: Guidelines for Making Canapés outlines the guidelines for making canapés.
- Essential Skills: Tips for Keeping Bread Fresh provides tips for keeping bread fresh. Bread can become stale long before it becomes unsafe to eat.
- Essential Skills: Making Basic Pizza demonstrates how to make a basic pizza.

Discuss

- Ask students if any of them have worked in a sandwich shop, pizza parlor, or quick-service restaurant. Ask them to describe the sandwich stations and the *mise en place* for sandwich making. Discuss with them the need for speed in such operations. How are food safety, speed, and accuracy achieved in these work settings?

Knowledge Check Answers (Page 339)

1. Worktable, storage facilities, storage materials, hand tools, portion-control equipment, and cooking equipment for hot sandwiches.
2. Ingredients at a sandwich station are prepared in advance so that workers can work quickly and efficiently.
3. Pizza should have its own preparation area because the flour needed could easily fall into other ingredients.

Homework Activity: Literacy

Sandwich Flowchart

Create a flowchart that illustrates the most efficient way to make a hot sandwich, such as the Monte Cristo, and a cold sandwich, such as a multidecker club. Your chart should start with the initial prepping of main ingredients and progress to final assembly of the sandwich on the plate. Where would the components be, and how would they be arranged? How would you control temperatures? How much space would be required?

PAGE 343

CASE STUDY FOLLOW-UP ANSWERS: “CULINARY EXPLORATION”

1. Students should refer to page 335. They should keep in mind that the pizza will be an item on the lunch, not dinner, menu.
2. At the sandwich station, the following items will be needed: worktable, refrigeration equipment, steam table, paper products, plates, plastic wrap, deli paper, hand tools, scoops for fillings, portion scale, griddles, grills, broilers, deep-fryers, and microwave oven.

PAGE 344–345

CHAPTER ACTIVITIES ANSWERS

- **Where Did Pizza Come From?:** Students will need to research the history of pizza and its origins. The library and Internet will be good sources.
- **Is the Sandwich Safe?:** Students should refer back to page 336 for the basic components of a sandwich. Students should also refer back to chapter 6, pages 104–112, on pathogens and cross-contact, and chapter 8, page 142, which discusses cross-contamination.
- **The Cost of Doing Business:**
 1. The food cost of one sandwich is \$3.56.
 2. The food cost of the order is \$356.
 3. Delia will need the following amounts of each ingredient to produce the order:
 - Mayonnaise: 50 ounces
 - Tomatoes: 200 slices, or 34 tomatoes
 - Bacon: 300 slices, or 15 pounds
 - White bread: 300 slices, or 19 loaves
 - Turkey: 400 slices, or 25 pounds
 - Lettuce: 300 leaves, or 25 heads
 4. Delia's order for ingredients will cost \$408.05.
 5. Delia will have some ingredients left over after making 100 sandwiches. She will have 78 ounces of mayonnaise, 11 pounds of tomatoes, 5 pounds of bacon, a quarter of a loaf of bread, and five heads of lettuce remaining.
- **Sandwich Stations:** This creates a "mix-and-match" format for innovation. Each group should create sandwich suggestions in the form of a table or chart.
- **Buying the Right Equipment:** Students should refer back to pages 338–339. They'll want to consider the cost of the investment compared to the usefulness and versatility of the equipment.
- **Which Sandwich to Choose?:** Because no help is available in the hypothetical sandwich shop, the student will have to consider logistics. Consideration should be given to efficiency of preparation, as well as the potential to use the same ingredients different ways in several different sandwiches, to keep cost and prep time down.

PAGE 346

EXAM PREP ANSWERS

- | | | |
|---------------|---------------|----------------|
| 1. C (p. 338) | 5. A (p. 336) | 8. B (p. 336) |
| 2. D (p. 333) | 6. B (p. 336) | 9. A (p. 335) |
| 3. D (p. 333) | 7. B (p. 333) | 10. C (p. 335) |
| 4. C (p. 334) | | |

Chapter 17

Teacher's Companion

CHAPTER OVERVIEW

This chapter presents the preparation, selection, and uses of stocks, sauces, and soups. The first section describes how to make, use, and store stocks. The next section presents the five grand sauces and their derivative sauces. The sauces are discussed with their culinary uses and applications. The final section discusses soups as menu items, as main dishes or accompaniments, and on lunch and dinner menus.

CHAPTER OBJECTIVES

- 17.1 Identify the four essential parts of stock and the proper ingredients for each.
- 17.2 List and explain the various types of stock and their ingredients.
- 17.3 Demonstrate three methods for preparing bones for stock.
- 17.4 Prepare the ingredients for and cook several kinds of stocks.
- 17.5 Explain how and why to remove fat from stock.
- 17.6 List the ways to cool stock properly.
- 17.7 Prepare the mother sauces, and describe other sauces made from them.
- 17.8 List the proper ingredients for sauces and explain how to create them.
- 17.9 Prepare various small sauces.
- 17.10 Identify ways to use sauces.
- 17.11 Identify the two basic kinds of soups, and give examples of each.
- 17.12 Prepare the basic ingredients for broth, consommé, purée, clear, and cream soups.

ADVANCE PREPARATION

Review	• Chapter 17, pages 350–375 • Unit case study, “Culinary Exploration,” pages 298–299
Contact	• Local restaurants and foodservice operations, as needed • Butcher, for bones, or commercial meat supplier
Prepare	• Bones for stock, ingredients for sauces, basic soup recipes and ingredients • Onion, carrot, and celery for mirepoix (excellent for practicing knife skills) • Cheesecloth and twine for sachets

CHAPTER BREAKDOWN

PAGE 352

INTRODUCTION

Discuss

- Stock is a flavorful liquid used as a foundational ingredient in many foods.
- There are grand sauces that are classic. Sauces should be matched to foods.
- There are two main soup categories: clear soup and thick soup.

PAGES 352–359

STOCKS

Customized Instruction

Learning disabled	Build a pie graph of the proportions of vegetables for mirepoix. Students can use colored paper, or color the paper accordingly: yellow for onions, orange for carrots, green for celery. Refer to the photo in Figure 17.1. For LD/ELL: Watch videos for blanching bones and preparing stock. Write down the steps you see. Compare the steps to the Essential Skills steps listed on pages 356 and 357.
Academically gifted	Using the basic formula for stock, write recipes for the various types of stock shown in Table 17.1. Read Michael Ruhlman’s <i>The Making of a Chef: Mastering Heat at the Culinary Institute of America</i>, paying close attention to the portion covering stocks and sauces. Write a book report with your observations.

(continued)

ELL	Create a graph or spreadsheet with four basic columns: meat/bones, liquid, mirepoix, and aromatics. Use Table 17.1 to fill in the types of stock and what ingredients would make the flavor profile. Search recipes to find the answers. Create a poster to show the basic ratio of ingredients for various stocks, as found on page 357. For example, draw 8 pounds of bones, 6 quarts of water, and 1 pound of mirepoix (50 percent onion, 25 percent carrot, and 25 percent celery). Use images to create the ratios.
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Reinforce and Review

- The four essential parts to all stocks are a major flavoring, a liquid, mirepoix, and aromatics.
- Stocks have essential components that the students should be able to name.
- Every stock has a flavoring component, such as bones or vegetables.
- Video: How to Prepare Stock: This video shows the essential skill of making a basic stock.
- Essential Skills: Blanching Bones lists the steps in blanching bones.
- Essential Skills: Preparing Stock lists the steps for preparing stock.
- Essential Skills: Cooling Stock lists the steps for properly cooling stock.

Discuss

- Stock adds a boost of flavor to a dish. Why?
- Is stock commonly used in the home kitchen?
- It is possible that making a smaller pot of blanched bones for stock works better within the constraints of the classroom? Let the students know that in a commercial kitchen, a large batch would be made in a large stockpot or large commercial kettle.
- In the case of stock, boiling hard or mishandling the components of the stock might decrease the effort or cooking time, but might yield a poor product. Is this really the goal?
- Fat will float to the top above the stock. When chilled, the floating fat will congeal on the surface of the stock. This can be carefully removed.

Vocabulary Review

- **Mirepoix:** French word that refers to the mixture of coarsely chopped onions, carrots, and celery that provides a flavor base for stock; the mixture is usually 50 percent onions and 25 percent each of carrots and celery. For pale or white sauces, such as fish fumet, cooks usually use white mirepoix, in which they substitute parsnips, additional onions, leeks, and even chopped mushrooms for carrots.
- **Aromatics:** The herbs, spices, and flavorings that create a savory smell.

- **Bouquet garni:** French for “bag of herbs,” this is a bundle of fresh herbs, such as thyme, parsley stems, and a bay leaf, tied together.
- **Sachet d’épices:** Similar to bouquet garni, but this is an actual bag of herbs and spices; the spices, including parsley stems, dried thyme, bay leaf, and cracked peppercorns, are placed together in a cheesecloth bag.
- **Stock:** A flavorful liquid made by gently simmering bones and/or vegetables to extract the flavor, aroma, color, body, and nutrients of the ingredients. Stocks are often called the cook’s “building blocks,” and they form the base for many soups and sauces.
- **Bouillon:** The liquid that results from simmering meats or vegetables; also referred to as broth.
- **Brown stock:** An amber liquid made by simmering poultry, beef, veal, or game bones that have been browned first.
- **Court bouillon:** An aromatic vegetable broth used for poaching fish or vegetables.
- **Fumet:** Very similar to fish stock, this is a highly flavored stock made with fish bones and reduced to intensify flavor.
- **Glaze:** Sometimes referred to as “glaze,” this is a reduced stock with a jelly-like consistency, made from brown stock, chicken stock, or fish stock.
- **Jus:** This is a rich, lightly reduced stock used as a sauce for roasted meats.
- **Remouillage:** A weak stock made from bones that have already been used in another preparation, sometimes used to replace water as the liquid used in a stock; remouillage is the French word for “rewetting.”
- **Vegetable stock:** Stock usually made from mirepoix, leeks, and turnips; tomatoes, garlic, and seasonings may also be added to flavor or darken the stock. Any vegetable can be included in vegetable stock, but leafy greens tend to make the stock bitter.
- **White stock:** A clear, pale liquid made by simmering poultry, beef, or fish bones.
- **Blanching:** Process in which bones are placed in a stockpot, covered with cold water, and brought to a slow boil; at full boil, the floating waste or scum is removed. Blanching bones rids them of some of the impurities that can cause cloudiness in a stock.
- **Brown:** To roast bones in a hot (400°F, or 200°C) oven for about an hour, until they are golden brown. Browned bones give a stock a richer flavor and deeper color.
- **Sweating:** Process in which bones and/or vegetables are cooked in a small amount of fat over low heat until they soften and release moisture. Sweating causes the bones and mirepoix to release flavor more quickly when liquid is added.
- **Fat removal:** The process of removing fat that has cooled and hardened from the surface of stock by lifting or scraping away the fat before reheating the stock. Fat removal gives the stock a clearer and purer color and also removes some of the fat content, making the stock more healthful.

Knowledge Check Answers (Page 356)

1. Blanching the bones rids them of some of the impurities that can cause cloudiness in a stock.
2. The four essential parts of stock are a major flavoring ingredient, a liquid, mirepoix, and aromatics.
3. Stocks are called the chef's "building blocks" because they form the base for many soups and sauces.
4. White stock is a clear, pale liquid made by simmering poultry, beef, or fish bones. Brown stock is an amber liquid made by simmering poultry, beef, veal, or game bones. Fumet is highly flavored stock made with fish bones. Court bouillon is an aromatic vegetable broth. Glace is a rendered stock with a jelly-like consistency. Remouillage is a weak stock made from bones that have already been used in another preparation. Bouillon is the liquid that results from simmering meats or vegetables. Jus is a rich, lightly reduced stock. Vegetable stock is usually made from mirepoix, leeks, and turnips.

In-Class Activity: Physical

Assembly of *Bouquet Garni* and *Sachet d'Épices*

Assemble the necessary herbs, spices, strings, and cheesecloth bags.

Give students time to practice assembling these two packets, assisting as needed.

In-Class Activity: Science

Taste-Testing Stocks

Approach a chef at a local restaurant that makes stock from scratch and ask if the restaurant will donate or sell a small sample of the stock for the students to taste. Include this sample, along with samples of commercially prepared stocks of several varieties, including some low-sodium stock.

Prepare a blind taste test. Have the bowls of stock labeled with a number. Keep an unseen key identifying the various types of stock by number. Use clean plastic spoons for each student and for each sample.

The students taste each sample and rate, rank, or note their opinions of it based on the rating, ranking, or sharing system chosen by the teacher. Students should share their findings.

To modify: Perform a blind taste test with stocks made in the classroom and store-bought varieties.

In-Class Activity: Roux Jigsaw

Supplies:

Butter	Whisks
Flour	Pans
Milk	Bowls
Light stock	Enough clean plastic spoons for each student to have three
Brown stock	

Divide the students into pairs or teams, and assign them to a kitchen.

Refer students to the Essential Skills instructions for making roux, which appear on page 362. Then assign each team to make one of the following:

- White roux
- Blond roux
- Brown roux

When each group's roux has reached the correct color and texture, have each group show their roux to the entire class. Encourage the students to look at and smell the aroma of the roux

In-Class Activity: Science

Heat Transfer

Cool stock before putting it in the refrigerator for storage.

- **Why not just put it in the fridge hot?** The warmth of the soup will move into the refrigerator. The kinetic energy, or motion, of hot molecules imparts energy to the slower molecules in the cooler, heating them up. The hot soup pot will heat up items in the refrigerator.

One way to cool the pot of stock is to put some ice cubes into a zippered plastic storage bag, sealed. Put this in the pot. It will float.

- **Why will it float?** The solid phase of water has a lower density than liquid water. The solid form is a crystalline lattice structure that is more open than the flowing molecules in the liquid phase.

When the ice melts, remove the bag, empty the water in the sink, rinse the bag, fill it with more ice, and put it back in the stock.

- **How does the ice cool the stock?** Ice cools the stock the same way the stock warms the fridge. Actually, the stock warms the ice, and in so doing loses some of its heat. The kinetic energy of the molecules of stock transfers to the water molecules in the ice lattice, freeing them to move and flow. The ice melts and the water is warmer than the ice was. Some of the heat of the stock has moved into the bag.

Use scientific principles to answer all three questions. Refer to food safety procedures to properly cool hot items in chapter 8, page 151.

Knowledge Check Answers (Page 359)

1. Flavor, color, body, and clarity determine the quality of stock.
2. You should use 1 pound of mirepoix.

PAGES 359–365

SAUCES

Customized Instruction

Learning disabled	Create a family tree poster. Start with the various stocks at the top, then branch off for the mother sauces (not all mothers come from stocks, however), and then derivatives. Use Table 17.2 for reference.
Academically gifted	Research the history of mother sauces, paying close attention to Escoffier's role. Write an essay with your findings. Include a graph with the mothers and as many derivatives as you can find. Answer the questions posed in the bullet points on pages 364–365 on appropriate sauce usage based on a research project of your own design.
ELL	Make a graphic organizer to show the mother sauces and ingredients in Table 17.2. Create or find images to replicate the ingredients shown. Add additional images to define the other key terms from the section.

Reinforce and Review

- The five grand sauces are béchamel, velouté, brown, tomato, and hollandaise.
- Thickeners add richness and body to sauces.
- Other sauces that are not classified as grand sauces are derivatives of grand sauces. Sauces should match the type of food being served.
- Essential Skills: Making a Roux lists the steps for making a roux. It is important to constantly stir the roux to prevent burning.

Discuss

- Why are grand sauces called grand sauces? What does it mean to be a derivative?
- How does the flavor of a darker roux differ from the flavor of a lighter roux?
- Why is flour added to a warm liquid while cornstarch is added to a cold liquid?
- What ingredients are found in different types of salsas?
- Why is it important to match a sauce with a meal?

Vocabulary Review

- **Sauce:** A liquid or semisolid product that is used in preparing other foods and that adds flavor, moisture, and visual appeal to another dish.
- **Saucier:** A cook who specializes in making sauces.
- **Roux:** A thickener made of equal parts cooked flour and a fat, such as clarified butter, oil, or shortening.
- **Mother sauces:** Five classical sauces that are the basis for most other sauces; mother sauces are sometimes called “grand sauces.”
- **Béchamel:** A mother sauce made from milk and white roux.
- **Velouté:** A mother sauce made from veal, chicken, or fish stock and a white or blond roux.
- **Brown or Espagnole sauce:** A mother sauce made from brown stock and brown roux.
- **Tomato sauce:** A mother sauce made from a stock and tomatoes (roux is optional).
- **Hollandaise:** Mother sauce that is an emulsion made from eggs, butter, and lemon.
- **Small sauces:** Also known as derivative sauces, these are sauces made using one of the five mother sauces. For example, demi-glace, a rich brown sauce, is traditionally made by combining equal parts espagnole sauce and veal stock and reducing to 50 percent of its starting volume.
- **Demi-glace:** A rich brown sauce traditionally made by combining equal parts espagnole sauce and veal stock and reducing to 50 percent of its starting volume.
- **Reduction:** Reducing a liquid ingredient in order to concentrate its flavor within the dish, while also helping with the final consistency of the finished sauce, so that it will coat and hold on the plate.
- **White roux:** This is cooked for a very short period of time and is used in sauces where little color is needed, like béchamel; white roux is bland and a little starchy and has the most thickening power.
- **Blond roux:** This is cooked longer than white roux, until the flour turns golden and has a nutty aroma, and it is used in ivory-colored sauces like velouté. Blond roux is a bit more flavorful and has a nutty taste to match the aroma.
- **Brown/dark brown roux:** This sauce is cooked until it develops a dark brown color, and it is used in dishes that require a dark brown color. Brown roux is nutty and a rich medium-brown color. Dark brown roux is quite dark, with a nutty, roasted flavor. Brown roux has the least thickening ability because the starch has been cooked the longest.
- **Beurre manié:** A thickener made of equal parts flour and soft, whole butter that is mixed together and shaped into small pea-sized balls and added to a cooking sauce. *Beurre manié* can be used to thicken a sauce quickly at the end of the cooking process.
- **Slurry:** Cornstarch mixed with a cold liquid, which can be used instead of roux; the consistency should look like heavy cream.

- **Liaison:** A mixture of egg yolks and heavy cream, often used to finish some sauces, such as *Allemande* sauce. A liaison adds a rich flavor and smoothness to a sauce without making it too thick.
- **Temper:** To bring to the proper state (such as a certain temperature and consistency) by slowly mixing in or adding a liquid ingredient, such as when tempering a sauce.
- **Compound butter:** A mixture of raw butter and various flavoring ingredients, such as herbs, nuts, citrus zest, shallots, ginger, and vegetables; compound butters are used to finish grilled or broiled meats, fish, poultry, game, pastas, and sauces, among other uses. Compound butter is rolled into a long tube shape, then chilled and sliced for use as needed.
- **Maître d'hôtel butter:** A specific type of compound butter with lemon juice and chopped parsley; it is often used to garnish grilled meat or fish.
- **Coulis:** A thick puréed sauce made from vegetables or fruit.
- **Salsa:** A cold mixture of fresh herbs, spices, fruits, and/or vegetables that can be used as a sauce for meat, poultry, fish, or shellfish.
- **Jus lié:** A sauce made from the juices of cooked meat and brown stock.
- **Au jus:** Meat served with its own juices.
- **Wringing method:** Way of straining a sauce to make sure it is smooth. In this method, a clean cheesecloth is placed over a bowl, and the sauce is poured through the cheesecloth into the bowl. The cloth is then twisted at either end to squeeze out the strained sauce. The cheesecloth catches the unwanted lumps of roux, or herbs, spices, and other seasonings.

Knowledge Check Answers (Page 365)

1. Eggs benedict and hollandaise sauce.
2. The sauce should be flavorful, but not overpowering. The sauce should look nice on the plate. The sauce flavor should match the dish it accompanies.
3. Béchamel is a white sauce, roux-based with milk or cream. Velouté is made from a blond meat stock (veal, chicken, or fish) and is thickened with a white or blonde roux. Brown or *espagnole* is made from a brown stock and a brown roux. Tomato sauce is made from stock and tomatoes, but not necessarily a roux. Hollandaise is made from butter and lemon juice, emulsified with egg yolk; there is no stock in this sauce.

In-Class Activity: Literacy

Nested Recipes

Nested recipes are a data-management name for classic recipes and their derivatives. When recipes are nested, they are used as an entity within another entity.

Whether the topic is nutrient analysis, cost analysis, equipment use, or time use, the basic recipe is quantified first. The next recipe that is derived is quantified using the first recipe as an ingredient.

The foodservice operation must understand the first recipe to understand all the recipes derived from it.

The nutrient ingredient value totals for the first recipe are plugged into the calculations for the values of the second, third, and so forth.

This may also be done for cost analysis, time analysis, ingredient analysis, or any other type of food analysis.

The following may be read verbatim to the students to help build their listening comprehension:

Let's do a time analysis.

A recipe of béchamel sauce will require a certain amount of time to make.

Once it is made, a cheddar cheese sauce may be derived from it.

Making a cheddar cheese sauce also requires time, and béchamel sauce will be one of its ingredients. Making baked macaroni and cheese with cheddar cheese sauce as an ingredient will also require a specific amount of time.

In order to know how much time baked macaroni and cheese really requires, you would have to add the time to make béchamel, plus the time to make cheddar cheese sauce, plus the time to make baked macaroni and cheese.

Using the above example, see if the students can understand this process when it is described verbally. Gauge their understanding by having them verbalize the process in their own words. They could also verbally present other possible examples of nesting data.

In-Class Activity: Literacy

Dishes That Use Derivative Sauces

Using the Internet, research classic dishes that use sauces derived from the grand sauces. For example, a cheddar cheese sauce derived from béchamel is used in classic baked macaroni and cheese.

Challenge the students to work independently online to find at least one dish for each of the derivative sauces listed in Table 17.2. Have the students copy/scan Table 17.2 and add their own fourth column with the results of their research.

Have the students share their work with the class or turn it in for evaluation. The students should keep this product for future reference.

In-Class Activity: Literacy

Matching Sauces to Food Game

Use two colors of index cards. On one color, make “sauce” cards. Write the name of a sauce on each card. On the other color, make “dish” cards. Write some dish suggestions on each card. There should be twice as many dish cards as sauce cards. Place the two types of cards face down on a table. Place the “sauce” cards on the left and the “dish” cards on the right. Divide the class into two teams.

A player from team one can turn over a sauce card and then turn over a dish card. If the two match well, the team gets a point and the dish card is removed. If not, both the cards are turned over and remain in play. The game is over when the dish cards are gone or a time limit has been reached. The teacher is the final arbiter of the matched.

In-Class Activity: Writing

Compound Butter Brainstorm

Provide butter and various herbs, spices, and flavorings for the students to use. Encourage the students to create their own mixture for compound butter, writing down their recipes as they work.

Wrap the butter in wax paper or plastic wrap and chill for later use. Students should mark their work clearly with their names.

PAGES 365–366
SOUPS

Customized Instruction

Learning disabled	Create a graph with two columns, for clear and thick soups. List as many soups as you can, under each category.
Academically gifted	Create <i>mise en place</i> plans for the essentials skills listed on pages 368–369. Choose recipes to match the skill, cost ingredients, and demonstrate (or film) each skill.
ELL	Provide the student with a photo of clear soup labeled “Clear “soup” and a photo of thick soup labeled “Thick soup.” Ask the student to fold one sheet of paper in half. Label one side “Clear soup” and the other side “Thick soup.” Provide the student with photos of various types of soups. Have the student assign them to the Clear or Thick side of the paper. Evaluate the student’s comprehension of the words. Have the student keep the organizer in the course notebook for future reference.

Reinforce and Review

- Serving soup at the beginning of a meal provides an opportunity to make a good first impression.
- Preparing and serving soups helps you learn more about basic culinary techniques, seasonings, garnishing, and serving foods.

- There are two basic kinds of soup—clear and thick. Roux is not just used with sauces. Cream soups are also thickened with it.
- A purée soup will have thickness from the purée itself. Some of the purée ingredients will also have starch to add thickening.
- There are many variations of basic soups, including the following:
 - Dessert soups, such as *ginataan*, a Filipino soup made from coconut milk, milk, fruits, and tapioca pearls, and served hot or cold.
 - Fruit soups, such as winter melon or gazpacho, a savory soup with a tomato base.
 - International soups, which can be hot or cold. Examples of cold soups are borscht, a beet soup, and vichyssoise (vi-shee-SWAHZ), a French-style soup made of puréed leeks, onions, potatoes, cream, and chicken stock. Hot soups include Vietnamese pho (pronounced fuh), a rich beef stock with noodles and thinly shaved beef, or French onion soup, made with beef stock and topped with melted Gruyère cheese.
 - Traditional regional soups, such as New England clam chowder, which is cream sauce based, Manhattan clam chowder, which is red sauce based, or gumbo, which is a Creole soup made with okra and shrimp.

Discuss

- Does soup always need to be served at the beginning of the meal?
- Do you think about soup in terms of clear and thick? What other adjectives or terms can describe soup?
- Have you ever tried a cold soup?
- Have you ever tried a dessert soup?

Vocabulary Review

- **Clear soups:** One of two basic kinds of soup; clear soups are usually fairly transparent and include flavored stocks, broths, and consommés. Examples include chicken noodle soup, minestrone (a tomato-based vegetable soup), and onion soup.
- **Thick soups:** One of two basic kinds of soup; thick soups include cream soups and purée soups, such as bisques, chowders, cream of tomato, lentil, and split pea soup.

PAGES 366–369

PREPARING SOUPS

Customized Instruction

Learning disabled	Create a graph with two columns, for clear and thick soups. List as many soups as you can, under each category. How does a raft work to clarify stock? Create a graphic organizer with images to show what this is and how this works. Search for videos to review the technique, and incorporate the research into your notes.
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(continued)

Academically gifted	The <i>oignon brûlé</i> (oy-NYON broo-LAY) is one of many traditional techniques to flavor soups and sauces. Research any other traditional techniques to flavor soups and sauces, like the <i>sachet</i> or <i>oignon brûlé</i>, and write a report with your findings. Alternative: Make or buy soup? Research the costs involved in making soup from scratch in-house or buying premade items. Provide support for both positions, and create a poster to present the information.
ELL	Make a graphic organizer with images or video clips for the essential skills for preparing basic broth, preparing basic consommé, clarifying stock, making cream soup, and making bisque. Use the images to show the actions described in each step. Refer to pages 368 and 369.

Reinforce and Review

- Soups must be cooked and flavored properly, including the finishing garnishes.
- Stock or broth is the basic ingredient in clear soups. Broth is made from a combination of water; vegetables; beef, fish, chicken, or veal; mirepoix; and *bouquet garni*. It should be clear to pale amber in color and have the flavor of the major ingredient.
- One type of clear soup is consommé (kon-sah-MAY). This is a rich, flavorful broth or stock that has been clarified. A consommé is made by adding a mixture of ground meats with mirepoix, tomatoes, egg whites, and *oignon brûlé* (oy-NYON broo-LAY) to bouillon or stock.
- Slowly simmer the mixture until the impurities come to the surface, trapped in a raft, which is the floating layer of egg whites, meat and vegetable solids, and fats. Remove the raft, and the result is pure and clear, or clarified.
- There are two kinds of thick soup—cream soups and purée soups. Both purée and cream soups are made with a liquid and either *sachet d'épices* or *bouquet garni*. Then a puréed main ingredient, to provide the main flavor, is blended into this base.
- Essential Skills: Preparing Basic Broth list the steps in making a basic broth.
- Essential Skills: Preparing Basic Consommé lists how to prepare consommé. Consommé is a clear, meat-based soup.
- Essential Skills: Clarifying Stock lists the steps for clarifying stock.
- Essential Skills: How to Make a Cream Soup lists the steps to making a cream soup.
- Essential Skills: Making Bisque explains how to make bisque.

Discuss

- What are the differences between stock, broth, and consommé?
- What is the difference between a clear and thick soup?
- When is a consommé served? Why?

Vocabulary Review

- **Oignon brûlé:** A “burnt onion”; made by cutting an onion in half across its hemisphere, and then charring the flat part either on a flat-top range or grill, or in a dry (fat-free) pan. *Oignon brûlé* adds color and flavor to a consommé, but care must be taken to prevent too much burning.
- **Raft:** The floating layer of egg whites, meat and vegetable solids, and fats that comes to the surface of a consommé as it slowly simmers; the raft is then removed, resulting in a pure and clear, or clarified, consommé.
- **Clarified:** Made clear; for example, once the raft is removed from consommé, the result is pure and clear, or clarified.
- **Purée soup:** Soup thickened by the starch found in the puréed main ingredient. Purée soups are coarser than cream soups, but should be liquid enough to pour easily from a ladle. The main difference between a purée and cream soup is that cream soups are usually thickened with an added starch, such as roux.
- **Chowder:** Hearty, thick soup made in much the same way as a cream soup. Chowders are not puréed before the cream or milk is added, but are usually thickened with roux and typically include large pieces of the main ingredients (usually potatoes or seafood) and garnishes.

Knowledge Check Answers (Page 367)

1. Clear soup has a clear broth, no matter what other ingredients are included. Thick soups include cream soups and bisques.
2. Cream soups are thickened with cream or milk and a roux or other thickening agent. Purée soups are forced through a chinois or blenderized, and thickened with the main ingredient. Whatever the ingredients, they are now an opaque mixture.
3. Chowders are hearty, thick soups made in much the same way as cream soups. Chowders are not puréed before the cream or milk is added.

In-Class Activity: Science

Teacher Demonstration

The students should observe a raft clarification.

Make a very small batch of consommé and have it in the class for the students to see. It could be a very small saucepan or a large stockpot. Make a raft with egg whites and the solid components that are simmering in the soup.

Show the students how it rises to the top. Show the students how to gently and carefully break the hole in the raft. If possible, let the students have some hands-on experience.

In-Class Activity: Literacy

100 Soups!

Prepare a bulletin board, blank poster, or long paper tape for the classroom. As a class, compile a list of 100 soups. This may be adapted for smaller or larger classes. Divide 100 by the number of students that you have. The answer is the number of soups each student will have to identify and describe.

Have the students find and research their assigned number of soups. As a class, compile a rough list allowing for some overlap and absent students. Determine the number of soups needed to reach 100. Assign that number to be researched and brought back.

When the list is ready, create the bulletin board, poster, or tape listing the 100 soups. They can be alphabetized, arranged as a spreadsheet, randomly arrayed, artistically presented, or displayed in any other way that suits your classroom. Display it in the room.

PAGE 370

CASE STUDY FOLLOW-UP ANSWERS: “CULINARY EXPLORATION”

1. To cool a large amount of stock, Chef Kate should not put the stockpot in the cooler. It will warm the cooler and its contents. Cool it the proper way. First, cool stock from 135°F to 41°F (57°C to 21°C) within two hours. Then cool it from 70°F to 41°F (21°C to 5°C) or lower in the next four hours. The most effective way to do this is using an ice bath and stirring the stock.
2. Removing fat gives the stock a clearer and purer color. It also removes some of the fat content, making the stock more healthful. As the stock reheats, additional fat and impurities will rise to the top; skim these off to keep the stock clear.

PAGE 371

CHAPTER ACTIVITIES ANSWERS

- **Change the Sauce:** Student answers will vary. Sauce names should be more plainly descriptive, rather than using traditional French names. Students can consult menus at some modern and/or trendy restaurants to find ideas.
- **Thickening:** Student answers will vary. Students' charted results should reflect the two tests for each of the thickeners, with eight different results and details of which thickeners and methods worked best.
- **Math Makes a Good Soup:** Ten servings are desired. If the recipe makes four servings, how many batches do you need to make 10 servings?

$$10 \div 4 = 2.5$$

The recipe conversion factor is 2.5

The quantity of each ingredient in the recipe will be multiplied by 2.5 in order to make 10 servings.
- **Study the Sauce:** Student answers will vary. Students can consult the list of mother sauces in Table 17.2 for examples of sauce usage and come up with other creative ideas for names of dishes using their assigned mother sauce.

- **Bones to Bordelaise:** Student answers will vary, but they should include all the steps and ingredients necessary to make a specific derivative sauce. Students can consult the small sauces listed in Table 17.2.
- **Which Sauce Should I Use?:** Student answers will vary. The student's choice of main dish and accompanying sauce should be appropriate for the assigned event. Students should be able to justify their answers.

PAGE 372**EXAM PREP ANSWERS**

1. A (p. 352)

5. D (p. 358)

8. B (p. 363)

2. A (p. 352)

6. B (p. 359)

9. A (p. 365)

3. B (p. 355)

7. D (p. 362)

10. B (p. 367)

4. A (p. 357)

Chapter 18

Teacher's Companion

CHAPTER OVERVIEW

Chapter 18 introduces the student to the cooking skills required in contemporary foodservice establishments. The chapter details basic dry- and moist-heat cooking methods.

CHAPTER OBJECTIVES

- 18.1 List and explain the three types of heat transfer.
- 18.2 Describe dry-heat cooking methods, and list the foods to which they are suited.
- 18.3 Describe moist-heat cooking methods, and list the foods to which they are suited.
- 18.4 Describe combination-heat cooking methods, and list the foods to which they are suited.
- 18.5 Describe sous vide and microwave cooking techniques.
- 18.6 Identify ways to determine if a food has reached the correct degree of doneness.

ADVANCE PREPARATION

Review	- Chapter 18, pages 376–397 - Unit case study, “Culinary Exploration,” pages 298–299
Contact	Local chef, if necessary
Prepare	- Cooking equipment or videos to supplement items not available to show all cooking methods - Prepare a list of ingredients to match recipes for all the featured skills. This content-rich chapter may be paced into a longer time frame. Perform as many demonstrations as possible for the cooking methods. Allow students to demonstrate mastery with hands-on practice, if possible.

CHAPTER BREAKDOWN

PAGE 378

INTRODUCTION

Discuss

- “Cooking is... the process of preparing food for eating.” Ask students to consider this statement. Does it imply that cooking does not require heat? Does it suggest that factories engaged in canning vegetables and fruit are cooking? Are gardeners considered cooks, since they are growing and thereby preparing food?
- What cultural and regional preferences do students associate with different cooking methods?
- What are three basic cooking-method categories?

PAGES 378–379

HEAT TRANSFER

Customized Instruction

Learning disabled	Begin the chapter by creating a word wall with all of the key terms for the chapter on page 377. Students can work on defining the terms in chunks by section.
Academically gifted	Study the science behind the various methods of heat transfer. Create a poster to show the findings.
ELL	Create a graphic organizer for the chapter that pairs images with the key terms, or video, when applicable.

Reinforce and Review

- Heat is a type of energy. The primary ways in which heat travels in a professional kitchen are through convection, conduction, and radiation.
- Conduction uses direct contact to transfer heat from one item to another, while convection uses indirect contact to transfer heat between items, mediated by air, water, or fat.
- Radiation does not involve direct contact. Microwaves agitate the water molecules inside the food to heat the item, while infrared waves are created when a heat source warms an intermediary object, which subsequently heats the food item.
- Infrared waves cook from the outside in, while microwaves work from the inside out.

Discuss

- What other examples of heat transfer can students suggest?
- What is the difference between conduction, convection, and radiation?
- What is infrared heat and how is it used in cooking?

Vocabulary Review

- **Conduction:** The transfer of heat from one item to another when the items come into direct contact with each other; sometimes the heat is transferred to the air or from surface to surface.
- **Convection:** The transfer of heat caused by the movement of molecules (in the air, water, or fat) from a warmer area to a cooler one. When heating water, for example, natural convection occurs: As water heats at the bottom of the pan, it travels upward, transferring energy to the cooler water higher in the pot, with the hot water constantly rising and replacing the cooling water in a continuous process.
- **Radiation:** Cooking method that does not require physical contact between the heat source and the food being cooked; instead, heat moves by way of microwave and infrared waves.
- **Infrared heat:** Heat created when the heat from a source is absorbed by one material and then radiated out to the food. For example, the flame in a broiler heats the tiles in the broiler, which radiate the heat to the food. Infrared waves affect the exterior of food, with the heat on the outside of the food spreading inward through conduction. The result is that the outside of the food browns.

Homework Activity: Science

Heating Up the Place

Select one of the three methods of heat transfer commonly used in kitchens: convection, conduction, and radiation.

Explain how your selected method works and how it applies not only to foodservice but to other industries. Include any other information you believe to be relevant.

Produce a one-page report.

PAGES 380–387

DRY-HEAT COOKING METHODS

Customized Instruction

Learning disabled	Find videos to show the essential skills of broiling, grilling, roasting meat, sautéing, stir-frying, pan-frying, deep-frying, and breading. For each method, take notes on what you see. Find recipes for each method.
Academically gifted	Select recipes for each essential skill, and create <i>mise en place</i> plans for execution. Price and cost the recipes. Assemble the dishes into a sample menu, to present to investors in your new restaurant.
ELL	Break down each essential skill into images that describe each step. This could occur by watching a video, then taking a screenshot to capture the step. Draw the image from the screenshot, for each step and for every essential skill.

Reinforce and Review

- All foods prepared with dry-heat methods should be naturally tender or prepared with additional moisture. Adding moisture to items to be cooked with dry-heat methods is done in one of three ways: barding, larding, and marinating.
- Broiling cooks tender items rapidly, using a heat source above the item.
- Flavor can be added to grilled items using aromatic woods and savory marinades.
- Roasting and baking both cook food by surrounding it with hot, dry air, causing the item's outer layers to heat and create steam within the food.
- Foods can be roasted or baked with or without a cover. Using a cover will help retain moisture, but foods cooked without a cover will develop a golden brown color.
- A high level of browning and a unique taste are two important characteristics of griddled foods.
- When sautéing, the pan should be heated first before any fat or other ingredients are added.
- Stir-frying uses high heat and minimal fat to cook small pieces of food very quickly.
- Pan-fried items should be served as quickly as possible. Any delay will cause the crust to deteriorate and become soggy.
- Deep-frying cooks tender items that have been battered or breaded for protection by placing them in hot oil.
- Essential Skills: Broiling Food explains the steps for broiling food. What are the characteristics of a properly broiled item?
- Essential Skills: Grilling Food explains the steps for grilling foods. How do cooks know where to place each item of food on the grill in order to obtain the desired outcome?
- Essential Skills: Roasting Meat explains how to roast meat. Why should meat be seared before being roasted?
- Essential Skills: Sautéing explains how to sauté foods. Why is it important not to overload the pan with raw food? What will be the effect on food?
- Essential Skills: Steps for Stir-Frying lists the steps for stir-frying. What are the characteristics of a properly stir-fried item?
- Essential Skills: Pan-Frying lists the steps to pan-frying food. What effect can oil that is too hot or too cool have on the finished product?
- Essential Skills: Standard Breading Procedure lists the steps for breading food items. Why is it important to coat the entire product with each ingredient?
- Essential Skills: Deep-Frying lists the steps for deep-frying food. Why should the cooked food be blotted with absorbent paper toweling?
- Video: How to Roast Meat: This video demonstrates the steps to roasting meat.

Discuss

- Grilling and broiling can produce similar results and can be used to cook similar items. How do these cooking methods differ?
- How does roasting differ from baking, and are these differences really important?
- What are some characteristics of griddled items? What items are commonly cooked this way?
- How is stir-frying related to sautéing? Encourage students to compare and contrast the two cooking methods.
- Pan-frying and deep-frying require more fat than other dry-heat methods to prepare. Does that mean that foods cooked with these methods are inherently poor nutritional choices? How can these cooking methods be used to create healthful dishes?
- What role do batters and breading play in fried foods?

Vocabulary Review

- **Broiling:** A rapid cooking method that uses high heat from a source located above the food; broiled food becomes browned on the top. Food items that can be broiled include tender cuts of meat, young poultry, fish, and some fruits and vegetables.
- **Grilling:** A very simple dry-heat method in which the food is cooked on a grill rack above the heat source, resulting in a highly flavored outside and a moist inside. Grilled food has a smoky, slightly charred flavor because the fat melts and drips down into the heat source, along with some of the meat's juices; as the fat and juices burn, the smoke helps provide the charred flavor. The crosshatching look common to grilled food comes from the hot metal grill rack that the food sits on.
- **Roasting:** Technique that cooks food by surrounding it with hot, dry air in the oven; as the outer layers of the food become heated, the food's natural juices turn to steam and are absorbed into the food. Roasting generally requires longer cooking times than baking and often for the food to be raised off the pan by a rack or a bed of mirepoix. Roasting is most often used with large cuts of meat, whole birds (poultry), or fish. Roasted food should have a golden-brown exterior and moist, tender interior.
- **Baking:** Technique that cooks food by surrounding it with hot, dry air in the oven; as the outer layers of the food become heated, the food's natural juices turn to steam and are absorbed into the food. Food can be baked covered or uncovered, depending on the recipe. Food items that are baked uncovered, such as cookies and casseroles, develop a golden-brown color on top.
- **Griddling:** Cooking a food item on a hot, flat surface (known as a griddle) or in a relatively dry, heavy-bottomed fry pan or cast-iron skillet, with the goal of giving the product an even, golden-brown finish and a slightly crisp exterior texture.
- **Sautéing:** This method cooks food rapidly in a small amount of fat over relatively high heat, keeping water and vitamin loss at a low while gaining a high degree of color and flavor. When sautéing, the pan is heated first, and just enough fat is added to coat the bottom of the pan.

- **Sear:** To quickly brown the surface of an item, such as meat, over direct heat.
- **Stir-frying:** Like sautéing, this is a quick-cooking, dry-heat method, in which food is cooked over a very high heat, generally in a wok with little fat, and stirred quickly. In this Asian style of cooking, the items to be stir-fried, usually meats and fresh vegetables, are cut into bite-sized pieces, and the sauce is usually created in the same pan.
- **Pan-fry:** To cook food in oil over less intense heat than that used for sautéing or stir-frying. For pan-frying, many recipes call for coating the food with batter, seasoned flour, or breading first; the hot oil seals the food's coated surface and locks the natural juices inside, instead of releasing them. The oil should be deep enough to come halfway up the side of the food being cooked. The object of pan-frying is to produce a flavorful exterior with a crisp, brown crust that helps retain the food's juices and flavor.
- **Deep-fry:** Method of cooking in which a food item is breaded or coated with batter, immersed (completely covered) in hot fat, and fried until it is done. The outside of the food item develops a crispy coating, while the inside stays moist and tender.
- **Batter:** A mixture of the primary dry ingredient (wheat flour, all-purpose flour, corn meal, rice flour), the liquid (beer, milk, wine, water), and a binder (generally egg), which helps the mixture adhere to a product. Examples include the beer batter often used on fish, cornmeal batter used on corn dogs, and tempura batter used on tempura vegetables and fish.
- **Breading:** A breading has the same components as batter, but they are not blended together. A standard breading would be seasoned all-purpose flour and an egg-and-milk dip.
- **Float:** The point when an item being deep-fried rises to the surface of the oil and appears golden brown, indicating doneness.
- **Swimming method:** Deep-frying method in which a breaded or batter-coated food is gently dropped in hot oil, where it falls to the bottom of the fryer and then swims to the surface. Once on the surface, the item can be turned over, if necessary, in order to brown on both sides.
- **Basket method:** Deep-frying method in which food is breaded, placed in a basket, lowered into the hot oil, and then lifted out with the basket when it is done.
- **Double-basket method:** Deep-frying method for certain food that needs to be fully submerged in hot oil for a longer period of time in order to develop a crisp crust. In this method, the food item is placed in a basket, and then another basket is fitted on top of the first; the top basket keeps the food from floating to the surface of the oil.
- **Recovery time:** The amount of time it takes oil to reheat to the correct cooking temperature once food is added. The more food items dropped in the oil at one time, the longer the recovery time.
- **Smoking point:** The temperature at which fats and oils begin to smoke, which means that the fat has begun to break down. Oil for deep-frying should have a high smoking point, around 425°F (218°C).

In-Class Activity: Physical

Taste Test

Prepare a number of batters and breadings as a class. Use them to coat and fry foods, and then perform a taste test as a group. Which coatings are the most visually appealing? Which have the best texture? Which has the best flavor?

Homework Activity: Math

Roast Size

You have to roast enough meat to serve 30 6-ounce fillets at dinner service. What size piece of meat do you need to purchase and how long do you need to roast it? See roasting times below (taken from USDA website).

Red Meat, Type	Oven	Timing	Minimum Internal Temperature and Rest Time
Beef, tenderloin roast, whole; 4 to 6 lb	425°F (218 °C)	45 to 60 minutes total	145°F (63°C) and allow to rest for at least 3 minutes
Beef, tenderloin roast, half; 2 to 3 lb	425°F (218 °C)	35 to 45 minutes total	same as the whole

PAGES 388–390 MOIST-HEAT COOKING METHODS

Customized Instruction

Learning disabled	Find videos to show the essential skills for the moist-heat cooking methods. For each method, take notes on what you see. Find recipes for each method.
Academically gifted	Select recipes for each essential skill, and create <i>mise en place</i> plans for execution. Price and cost the recipes.
ELL	Break down each essential skill into images that describe each step. This could occur by watching a video, then taking a screenshot to capture the step. Draw the image from the screenshot, for each step and in every essential skill.

Reinforce and Review

- Common moist-heat cooking methods include simmering, poaching, shallow poaching, blanching, and steaming.
- Food that has been shallow-poached should be very tender and moist with a fragile texture. The cooking liquid serves as the base for a flavorful accompanying sauce.
- Blanching, a version of boiling, is commonly used to parcook foods for later use. Shocking the items in ice water keeps the food from overcooking.

- **Essential Skills: Shallow Poaching** explains the steps in shallow poaching. Why are shallow-poached items so fragile?
- **Essential Skills: Blanching** explains the steps in blanching. Why should blanching not cook the food thoroughly?
- **Essential Skills: Steaming Food on Top of the Range** lists the steps in steaming. Why should both a rack and a lid be used when steaming food?

Discuss

- Which foods are good candidates to be cooked with moist-heat methods? Which foods might not be good options?
- How are steaming and shallow poaching related?
- What effect does the use of pressure have on foods being steamed?
- What are some similarities between steamed foods and poached or shallow-poached foods? Consider appearance, texture, flavor, and nutritional value.

Vocabulary Review

- **Simmering:** Completely submerging food in a liquid that is at a constant, moderate temperature. Simmering cooks items at a slightly higher temperature than other moist-heat methods, 185°F to 205°F (85°C to 96°C). Simmering differs from boiling in that bubbles in a simmering liquid rise gently and just begin to break the surface.
- **Poaching:** Cooking food in a simmering liquid between 160°F and 180°F (71°C and 82°C). Naturally tender food and well-flavored liquid should be used, and the surface of the poaching liquid should show some motion, but no air bubbles should break the surface.
- **Shallow poaching:** Cooking food using a combination of steam and a liquid bath. The food is partially covered by a liquid containing an acid (usually wine or lemon juice), herbs, and spices in a covered pan. The steam cooks the items that are not directly covered by the poaching liquid. Shallow poaching is a last-minute cooking method best suited to food that is cut into portion-sized or smaller pieces.
- **Paupiettes:** Long, thin slices of fish or meat that are rolled and stuffed with a filling.
- **Cuisson:** The liquid left over from shallow poaching; shallow poaching transfers much of the flavor from the food item to the liquid (*cuisson*), which can then be used as a sauce base.
- **Blanching:** A variation of boiling in which food is partially cooked (also called parcooking) and then finished later. Cooks frequently use blanching to pre-prepare vegetables. Blanching is a two-step process: Once it is established that the item is cooked, it is quickly removed from the boiling water and plunged into an ice bath (shocking) to halt the cooking process. The food is then given a quick toss with seasoned butter in a hot pan at service. Cooks sometimes blanch food that takes too long to cook thoroughly before deep-frying it.
- **Parcooking:** To partially cook food that will be finished later.
- **Shocking:** Quickly removing food items from boiling water and plunging them into an ice bath to halt the cooking process.
- **Steaming:** Cooking food by surrounding it in steam in a confined space such as a steamer basket, steam cabinet, or combi-oven; direct contact with the steam cooks the food.

Knowledge Check Answers (Page 391)

- 1. Conduction is the transfer of heat from one item to another when the items come into direct contact with each other. Convection is the transfer of heat caused by the movement of molecules (in the air, water, or fat) from a warmer area to a cooler one. Radiation does not require physical contact between the heat source and the food being cooked. Instead, heat moves by way of microwave and infrared waves.
- 2. In dry-heat cooking, food is cooked either by direct heat, like on a grill, or by indirect heat in a closed environment, like in an oven. Moist-heat cooking techniques produce food that is delicately flavored and moist, sometimes with a rich broth that can be served as a separate course or used as a sauce base.

Homework Activity: Science

Egg Proteins

Demonstrate the egg-poaching process for the class so they can watch the albumen coagulate around the yolk. Note: Depending on the size of your class, you may want to do this in small groups or by creating a computer slide show of the various stages in the cooking process. You could also have each student, or pairs of students, practice poaching eggs after your demonstration.

Students should research the science behind egg poaching: what proteins are involved, the role of vinegar, and the temperatures at which various coagulations occur. Each student should produce a one-page report on his or her findings.

Homework Activity: Writing

Cooking Methods

Describe the differences between poaching and simmering. How are they the same? Why/when would you use one method rather than the other? Write a three-paragraph essay explaining your position.

PAGES 391–392 COMBINATION-COOKING METHODS

Customized Instruction

Learning disabled	Find videos to show the essential skills for combination-cooking methods. For each method, take notes on what you see. Find recipes for each method.
Academically gifted	Select recipes for each essential skill, and create <i>mise en place</i> plans for execution. Price and cost the recipes.
ELL	Break down each essential skill into images that describe each step. This could occur by watching a video, then taking a screenshot to capture the step. Draw the image from the screenshot, for each step and for every essential skill.

Reinforce and Review

- To braise an item, first sear it in hot oil, and then add enough liquid to the cooking vessel to come halfway up the sides of the item.
- The key to quality braising is long, slow cooking, which breaks down the connective tissue in the meat, making it tender and delectable.
- Properly braised items are generally considered fork tender and well done. The meat should be easily pulled apart with a fork, but should not be overcooked to the point that it is falling apart.
- Essential Skills: Braising lists the steps to braising food. What are the characteristics of a properly braised item?
- Essential Skills: Stewing lists the steps in stewing food.
- Video: How to Braise. This video shows the steps for braising a beef roast.

Discuss

- How are stews and braises different? In which cultures are they found? Why are so many stewed and braised items so similar?
- Can students identify examples of stews and braises popular in non-European cultures?

Vocabulary Review

- **Combination cooking:** Using a combination of both dry-heat and moist-heat cooking methods. For example, braising and stewing use both dry and moist heat to cook food that is less tender.
- **Braising:** In braising, the food item is first seared in hot oil, and then partially covered in enough liquid to come halfway up the food item. The pot or pan is then covered tightly, and the food is finished slowly in the oven or on the stove top until it is tender. As the meat cooks, its flavor is released into the cooking liquid, which becomes the accompanying sauce. The key to quality braising is long, slow cooking.
- **Pot roasting:** A common American term for braising as well as the name of a traditional dish (pot roast).
- **Stewing:** Stewing techniques are similar to braising, but the pre-preparation is a little different. First, the main food item is cut into bite-sized pieces, which are either blanched or seared. As with braising, the food is cooked in oil first, and then liquid is added. Stewing requires more liquid than braising, and the food should be covered completely while it is simmering.

Homework Activity: Literacy

Comparisons Are Odorous

Choose one of the following dishes: Blanquette, Bouillabaisse, Fricassee, Goulash, Navarin, Ragout, or Matelote.

Find two recipes for the dish. Compare and contrast them, looking at ingredients, amounts, cooking time, and other relevant factors.

Now research the history of the dish. What ingredients “should” it contain? Is there debate about the ingredients to be used? Do the two examples you have match the ingredients of the “real thing?”

Discuss your findings in a one-page report, appending the recipes you consulted.

PAGE 393

OTHER COOKING METHODS

Customized Instruction

Learning disabled	Find videos to show the essential skills for other cooking methods. For each method, take notes on what you see. Find recipes for each method.
Academically gifted	Select recipes for each essential skill, and create <i>mise en place</i> plans for execution. Price and cost the recipes.
ELL	Break down each essential skill into images that describe each step. This could occur by watching a video, then taking a screenshot to capture the step. Draw the image from the screenshot, for each step and for every essential skill.

Reinforce and Review

- *Sous vide* cooking uses precise temperature control to cook vacuum-sealed foods in a water bath for a specific time. Some items take as little as a minute or two to prepare, while others may cook for over 24 hours.
- Cooking food in a vacuum-sealed environment retains all the flavor and nutritional components that might otherwise be lost when using more traditional cooking methods.
- Microwave cooking is more suitable for some ingredients and dishes than others. Using recipes designed for microwave ovens can help maintain a high level of quality.
- Like steaming or poaching, microwave cooking prevents browning on the item’s exterior. Unlike those moist-heat techniques, though, the microwave cooks from the inside of the food toward the exterior.

Discuss

- What food items are more suitable for *sous vide* cooking?
- What is the difference between home microwaves and those used in foodservice operations?

Vocabulary Review

- **Sous vide:** French for “under vacuum,” this is a cooking method in which food is cooked for a long time, sometimes well over 24 hours. Food is placed in airtight plastic bags in water that is hot but well below boiling point. This cooks the food using precisely controlled heating, at the temperature at which it should be served.

PAGES 394–395

DETERMINING DONENESS

Reinforce and Review

- Checking the temperature of an item is always necessary. Just because the item has completed its standardized cooking time does not mean that it is “done.”
- The more done a high-protein item is, the more resistant to pressure it will be. Heat denatures and coagulates proteins, causing them to stiffen.
- The two most important qualities in determining a dish’s doneness are the desired texture and the necessary internal temperature. Taste is not a factor.

Discuss

- What is carryover cooking and how does it impact the doneness of food?

Vocabulary Review

- **Carryover cooking:** The process of continued cooking after a food item has been removed from its heat source.

Knowledge Check Answers (Page 395)

1. Combination cooking is a combination of both dry-heat and moist-heat cooking methods.
2. Braising and stewing use both dry and moist heat to cook food that is less tender.
3. *Sous vide* cooking uses precise temperature control to cook vacuum-sealed foods in a water bath for a specific time.

PAGE 395

CASE STUDY FOLLOW-UP ANSWERS: “CULINARY EXPLORATION”

1. Chef Kate needs to see if the veal has achieved the desired texture and if it has reached the minimum internal temperature it needs to be safe.
2. Conduction is the transfer of heat from one item to another when the items come into direct contact with each other. Convection is the transfer of heat caused by the movement of molecules (in the air, water, or fat) from a warmer area to a cooler one. Radiation does not require physical contact between the heat source and the food being cooked. Instead, heat moves by way of microwave and infrared waves.

PAGE 396

CHAPTER ACTIVITIES ANSWERS

- **Cooking Methods:** Roasting: A dry-heat cooking method that slowly cooks larger, often intact items in an oven with hot, dry air. Baking: A dry-heat cooking method that slowly cooks items in an oven with hot, dry air.
- **Maillard Reaction:** Students should research the Maillard reaction and its role in dry-heat cooking methods. By cooking the chicken breasts in two different ways, they will have the opportunity to observe the characteristic browning found in dry-heat cooking. Student responses should include both what they learned from researching the Maillard reaction and their direct observations of the cooking chicken.
- **Cooking the Beef :** Fifty 4-ounce fillets would equal 12.5 pounds total. Depending on the exact weight, you would need to purchase three whole beef tenderloin roasts, or two whole roasts and one half roast, to make sure you have over 12.5 pounds. Cooking times for the roasts would be as indicated in the chart on page 396.
- **Cooking in Teams:** Student answers will vary. Attention should be paid to searing and how that may affect flavor, depending on the combination-cooking technique used. Any other potential differences in method should be considered in regard to differences in flavor and appearance.
- **Pick a Protein:** Students may choose from among a broad range of proteins. The cooking techniques they suggest must be compatible for the ingredient chosen, and the recipes they develop should be original, not plagiarized from another source.
- **Cooking Methods:** Generally speaking, students should identify appropriate cooking methods for each item based on the item’s size and degree of tenderness. They should be able to defend their answers.

PAGE 397

EXAM PREP ANSWERS

- | | | |
|---------------|---------------|----------------|
| 1. B (p. 382) | 5. D (p. 391) | 8. C (p. 393) |
| 2. B (p. 388) | 6. A (p. 382) | 9. A (p. 388) |
| 3. D (p. 378) | 7. D (p. 389) | 10. C (p. 394) |
| 4. B (p. 382) | | |

Chapter 19

Teacher's Companion

CHAPTER OVERVIEW

This chapter introduces the principles and skills needed to successfully produce quality quick breads and cookies. The chapter also covers bakeshop basics, including baker's ingredients and measurements.

CHAPTER OBJECTIVES

- 19.1 Identify and use common ingredients in baking.
- 19.2 Calculate ingredient weights using baker's percentages.
- 19.3 Convert baking recipes to a new yield.
- 19.4 Prepare various types of cookies.
- 19.5 Prepare various types of quick bread.

ADVANCE PREPARATION

Review	- Chapter 19, pages 398–415 - Unit case study, "Culinary Exploration," pages 298–299
Contact	- Math teacher, if needed - Chemistry teacher, if needed
Prepare	- Flour and sugar for teaching - Scale for weighing flour and sugar 1 lb flour 3 bowls - Scales (sensitive, or gram scales, from the science department) 1-cup dry measuring cups - Paper towel - Blade spatula for leveling flour - Professional recipes with baker's percentages - Recipes to match the various recipes with the baking procedures

CHAPTER BREAKDOWN

PAGE 400

INTRODUCTION

Discuss

- What does baking mean to people?
- What are the range of ingredients that go into the broad category of baking?

PAGES 400–403

BAKER'S INGREDIENTS

Customized Instruction

Learning disabled	Create a graphic organizer for the eight categories of baker's ingredients. Use images and words to describe what each category does for the baked good. Find examples of each category.
Academically gifted	Research the chemistry behind the eight categories of baker's ingredients.
ELL	Make a word wall for the eight categories. Find action verbs to describe what each item does, and pair the verb with the ingredient example (noun).

Reinforce and Review

- Baker's ingredients fall into eight categories: strengtheners, fats/shortening, sweeteners, flavorings, chemical/organic/physical leaveners, thickeners, liquids, and additives.
- Flour has gluten in it already. Discuss the explanation of gluten.
- Kneading bread helps the gluten form into a structure.

Discuss

- Can students think of examples of foods that have vanilla extract?
- Vanilla and other extracts are often carried in an alcohol medium. Why?

Vocabulary Review

- **Strengtheners:** Ingredients in baking that provide stability and ensure that the baked item does not collapse once it is removed from the oven. Flour is a main strengthener used in baking.
- **Gluten:** A protein found in flour that, when baked, helps provide the firm structure and light, even texture needed in bread production. The more bakers mix, work, and knead yeast doughs, the more the gluten becomes elastic and stretchy. To check the gluten content of a particular flour, look at the nutrition label: the higher the protein content, the higher the gluten content.
- **All-purpose flour:** This flour falls between pastry and bread flour, and is good to use in cookies, biscuits, and general production work. Gluten content is 10%–12%.

- **Bread flour:** As its name suggests, this is a strong flour that is used for making breads, hard rolls, and any product that needs high gluten for a strong texture. Gluten content is 12.5%–13.5%.
- **Cake flour:** This flour has a low gluten content, a very soft, smooth texture, and a pure white color. Cake flour is used for cakes and other delicate baked goods. Gluten content is 7%–9%.
- **Durum flour:** This is a hard wheat flour used to make breads; its gluten content is a little higher than that of typical bread flour. Gluten content is about 13.5%–14%.
- **Pastry flour:** This flour is not as strong as bread flour and not as delicate as cake flour. Pastry flour is used for baking cookies, pie pastry, and some sweet yeast doughs, biscuits, and muffins. It feels like cake flour, but has the creamy color of bread flour. Gluten content is 9%–10%.
- **Semolina flour:** This is a type of durum flour, but it is more coarsely ground than the flour used to make most breads. It has a fine texture with a high gluten content and is primarily used to make pastas and certain Italian pastries. Gluten content is 13.5% or more.
- **Fats/shortenings:** These ingredients make baked goods moist, add flavor, and keep baked items fresh longer. Any fat, such as oil or butter, acts as a shortening in baking. The more thoroughly mixed, the more the fat will affect the item's overall texture.
- **Sweeteners:** These ingredients add flavor and color to baked goods and also help the shortening blend with other ingredients and make the product soft and tender. Sweeteners include refined sugars, sugar syrups, molasses, brown sugar, corn syrup, honey, and malt syrup (usually used in yeast breads).
- **Caramelization:** Process in which the heat from baking a product containing refined sugars causes the sugar to turn a light brown color. Caramelization occurs whenever sugar is used as an ingredient in baked items.
- **Leaveners:** In baking, leaveners allow the dough or batter to rise. It is important to measure all leavening agents very carefully; even small changes can produce major defects in baked products. Leaveners fall into three categories: chemical, organic, and physical.
- **Thickeners:** Combined with the stirring process, these items determine the consistency of the finished product. Thickeners include gelatin, flour, arrowroot (a powdered starch made from a tropical root), cornstarch, and eggs.
- **Flavorings:** Items such as cocoa, spices, salt, and extracts that affect a baked item's taste and color.
- **Extracts:** Flavorful oils (some are alcohol based) taken from such food items as vanilla bean, lemon, and almond. A few drops of extract greatly enhance the flavor of baked goods.
- **Liquids:** One of the most important elements used in baking, which can be water, milk, cream, molasses, honey, vegetable oils, or butter. Liquid is used to provide moisture to a product and to allow the gluten to properly develop. Water is the most basic and common form of liquid used in baking. Milk provides a baked product with flavor, nutritional value, and texture. Honey, molasses, eggs, oil, and butter also act as liquids in baking by contributing moisture to the baked item, as well as a unique taste and texture.
- **Additives:** Substances added to food to enhance its taste and/or appearance. Additives are often used in baking to enhance the product's color, texture, and taste, as well as to extend its shelf life.

- **Baking powder:** A versatile chemical leavener that is a mixture of baking soda and an acid with an inactive material, like starch. Because there is acid in the baking powder, no acid needs to be added to the batter for leavening to take place; leavening occurs when liquid and heat are added.
- **Chemical leaveners:** These ingredients react with other ingredients to produce carbon dioxide gas, which helps batter to rise as it is heated. Baking powder is an example of a chemical leavener.
- **Baking soda:** A chemical leavener (also called sodium bicarbonate) that releases carbon dioxide gas when mixed with a liquid and an acid.
- **Physical leaveners:** Ways of leavening a baked item by introducing air into the batter; the air expands during baking and leavens the product. Pastry chefs use two methods to introduce air into batter: creaming and foaming. Steam also plays a role in all baked goods, and is used as a physical leavener in cream puffs and pie crusts.
- **Creaming method:** A method in which the fat and sugar are beaten together to introduce air into a batter. The creaming method is used most often in cake and cookie making.
- **Foaming method:** Method in which eggs are beaten, with or without sugar, to create a foam as a physical leavener. Whole-egg foams are used in sponge cakes, and egg-white foams are used in angel food cakes, meringues, and soufflés.
- **Yeast:** A microscopic fungus used often in baking that acts as an organic leavener. When yeast is mixed with carbohydrates (such as sugar and flour) and liquid it ferments, or produces carbon dioxide gas and alcohol. Yeast works in much the same way that the chemical leaveners do, by releasing carbon dioxide gas, causing the bread dough to rise.
- **Ferments:** Produces carbon dioxide gas and alcohol in a process created by the mixing of yeast and carbohydrates such as sugar or flour.

In-Class Activity: Science

Food Science Definitions of Ingredients

The following vocabulary words are defined using some simple food science and chemistry principles:

- | | |
|---|--------------|
| • Strengtheners | • Thickeners |
| • Fats/shortenings | • Liquids |
| • Sweeteners | • Additives |
| • Flavorings | |
| • Chemical, organic, and physical leaveners | |

The same words are defined elsewhere in the chapter using terms that are more “culinary” and less “chemistry.” Do the two uses and definitions of the word change the meaning? Is the understanding of the word enhanced by knowing more than one language or definition?

In-Class Activity: Physical

Wheat Flour Taste Test

On a table, have a sample of each type of flour listed in Table 19.1. Have the students feel the characteristics of the flour. Have a taste test available, including a food product for tasting made from each type of flour. Part of the tasting experience should include noting the textures of the crusts made from the various flours.

Homework Activity: Literacy

Leaveners Venn Diagram Graphic Organizer

Using the information in Table 19.2, have the students create a Venn diagram graphic organizer about leavening agents. There should be four overlapping circles.

The common traits will be in the overlapping areas and the differences will be in the unique areas.

PAGES 404–405 BAKER'S PERCENTAGES

Customized Instruction

Learning disabled	Create a graphic organizer to represent the formula for soft yeast dinner rolls using baker's percentages in Table 19.3. Make approximate images to represent the various percentages. Assist in drawing connections to the total weight and the percentage. Use the same method or guided note taking to create visuals for converting baking yields.
Academically gifted	Gather several "at-home" baking recipes. If flour = 100%, solve for the other percentages and total weight.
ELL	Why does sifting matter? Make two batches of a baked good of choice, one sifted and the other not. What happened? Assess, then compare and contrast the results of your findings in a short summary. This can be used for over- or under-creaming, and many other baking procedures.

Reinforce and Review

- Baker's percentages are baking recipes that can easily have the yield scaled up or down.
- The formula for baker's percentage is expressed as:
Weight of ingredients divided by (Weight of flour × 100 Percent) = Percent of ingredient
- Essential Skills: Sifting: Why It Matters discusses why sifting is important in baking.

Discuss

- “If I have a pound of flour, that would be my 100 percent proportion for a baking formula.” Show students a pound of flour. Assess for understanding.
- “If my formula now calls for 50 percent sugar, how much sugar would this be if 1 pound is 100 percent?” The answer is ½ pound. Assess for understanding:

- Example: $0.5 \text{ lb sugar} \div (1 \text{ lb flour} \times 100 \text{ percent}) = 50 \text{ percent sugar}$

This can be turned around to calculate the weight of sugar:

- Example: $50 \text{ percent sugar} \times (1 \text{ lb flour} \times 100 \text{ percent}) = 0.5 \text{ lb sugar}$

0.5 can be expressed as ½ lb

- Remind the students that “percent” means “per 100,” or “divided by 100.” Every percentage is actually another way of expressing the decimal “100ths,” or two places to the right of the decimal point.
- Example: $50 \text{ percent} = 0.50 = 50/100$.
- Sifting used to be required to remove debris from flour and other dry ingredients. Why is it still done? Flour today is clean. What are the advantages of sifting flour?
- What are the advantages of sifting dry ingredients together?
- What if there are still clumps of baking soda or other dry ingredients remaining in the bottom of the sifter? What should be done with those ingredients?

Vocabulary Review

- **Formulas:** Standardized recipes for bakery products. They are set up a bit differently than recipes for other food items; proportions for each ingredient are given in the form of percentages, with flour always having a proportion of 100 percent in baking.
- **Baker’s percentages:** Refers to the percentages used in formulas in baking, where flour always has a proportion of 100 percent, and the percentages of all other ingredients are calculated in relation to the flour. This way, pastry chefs can convert recipes to give larger or smaller yields by simply changing ingredient amounts while keeping proportions and percentages the same. The formula for baker’s percentages is expressed like this: $(\text{Weight of ingredient} \div \text{Weight of flour}) \times 100 \text{ Percent} = \text{Percent of ingredient}$.

Knowledge Check Answers (Page 405)

1. Flour is the most common strengthener.
2. Baking soda and baking powder are two main chemical leaveners.
3. Sifting adds air to the flour, making it lighter and fluffier.

In-Class Activity: Math

Proportions

The term “proportions” is used throughout this chapter. Ensure that the students understand this concept.

Help the students to understand that proportions remain constant, regardless of how large or how small the recipe, sample, yield, and so on. A proportion is a portion of the whole. A whole is represented as 100 percent.

A visual of a pie graph might help here. The proportions in the pie graph are 25 percent, 33 percent, 39 percent, and 3 percent. No matter the size of the chart, the proportions remain the same:

It can be shown in various sizes to illustrate this point. Or a concentric circle could be applied within the pie chart and the proportions would still be constant.

No matter how large or how small the chart is, the proportions of 25 percent, 33 percent, 39 percent, and 3 percent remain constant.

Ask the students to provide real-life examples from their experience that might help illustrate this point.

One example might be frozen juice concentrate. No matter how much juice you want, you use the proportional recipe of 3 parts water to 1 part juice concentrate.

In-Class Activity: Math

Working with Baker's Percentage Formula

Using the sample recipe in Table 19.3, scale the recipe several ways for different yields. Use the math examples to perform the required math.

Example: To double the yield, you would multiply each ingredient amount by 2. This is not so difficult. The 2 ounces of dry yeast would become 4 ounces, and so on. Multiply everything by the factor of increased yield.

However, if the desire is to make the dough using 10 pounds of flour, then the conversions need to use the percentages. For dry yeast:

- 4.5 percent = 0.045
- $0.045 \text{ dry yeast} \times 10 \text{ lb} = 0.45 \text{ lb dry yeast}$

The conversion of pounds to ounces is 16 ounces = 1 pound.

To convert this to ounces, multiply: $16 \text{ oz} \times 0.45 \text{ lb} = 7.2 \text{ oz dry yeast}$

The recipe can also be decreased.

For example, if the baker would like to use 1 pound of flour:

- $0.045 \text{ dry yeast} \times 1 \text{ lb} = 0.045 \text{ lb dry yeast}$
- $16 \text{ oz} \times 0.045 \text{ lb dry yeast} = 0.72 \text{ oz dry yeast}$

Customized Instruction

Learning disabled	Find videos to show each of the cookies represented in Table 19.4, Types of Cookies. Write down the steps and a recipe for each.
Academically gifted	Select recipes and cost ingredients for a large cookie exchange event serving 1,000 people 10 cookies each. Choose one from the eight categories, with an additional two bonus from any category. Create batch sizes that will serve an audience of that size: 1,000 people with a selection of 10 cookies each.
ELL	Find recipes for each of the eight types of cookies. Write out the <i>mise en place</i> steps, and find or create images to associate the steps with action. Use the kitchen lab to capture things like smallwares, measuring tools, and equipment.

Reinforce and Review

- Cookies are efficient desserts to make.
- Help students realize that there is great skill involved in making fine cookies, even if they seem simple and commonplace to bake.

Discuss/Demonstrate

- What are the traits of a truly bad cookie? Students might mention these things, among others:
 - Burnt
 - Underdone
 - Tough
 - Boring
 - Too sweet
 - Icing too thick
 - Too crispy and fragile
 - Lump of baking soda
 - Stale
 - Greasy
- How can you remedy making a bad cookie?
- What cookies are students most familiar with?
- Which cookies are the easiest to make?
- Have students demo a recipe, like the Toll House recipe for chocolate chip cookies. Add certain actions, like over- or under-creaming, incorrect measurement of fat or flour, not sifting, no baking powder, no baking soda. What observations can be made from not following certain procedures?

Vocabulary Review

- **Cookie:** A sweet baked food made from flour and sugar that is usually small, flat, and round.
- **Bagged cookies:** Also known as piped cookies, these cookies are made by forcing soft dough through a pastry bag. Varieties include ladyfingers, macarons, and tea cookies.
- **Bar cookies:** These cookies are made by baking three or four bars of dough the length of the baking pan, and then slicing them into small bars. One variety is biscotti.
- **Dropped cookies:** These cookies are made from a soft dough and then dropped from a spoon or scoop onto the cookie sheet. Examples include chocolate chip and oatmeal cookies.
- **Icebox cookies:** These cookies are made by rolling dough into a log, chilling it, and then slicing it just before baking. Butterscotch icebox cookies and chocolate icebox cookies are examples.
- **Molded cookies:** These cookies are made by molding stiff dough by hand into any shape. Peanut butter cookies are an example.
- **Rolled cookies:** These cookies are cut from a stiff dough that has been rolled out on a baking bench. Varieties include decorated sugar cookies and shortbread. Rolled cookies are made more often at home than in commercial kitchens because they take a lot of work.
- **Sheet cookies:** For these cookies, the batter is poured into the entire baking pan and then sliced into individual squares or rectangles after baking. Brownies are usually made this way.

Homework Activity: Literacy

Cookie Makeup Methods

Research two cookie makeup methods. How does each work? Why is each used? What kinds of cookies are produced through each method? Compare and contrast the two methods in a one-page report.

PAGES 407–409

QUICK BREADS

Customized Instruction

Learning disabled	Find videos to show the three methods of preparing quick breads, found in Table 19.5. For each method, take notes on what you see. Find recipes for each method.
Academically gifted	What happens when the wrong method for making quick breads is used for a product. Design and test a hypothesis of what you believe will happen (to the resulting product). Use the proper method as the control, and test another small batch of product with the wrong method. Taste and analyze the resulting products, and record your findings in a lab report. Bonus math integration: For each recipe, adjust the yield to make only 4 servings of the product for both the correct and incorrect methods for quick breads.

(continued)

ELL	Use Table 19.5 for the steps to make the three methods of quick breads. Create or find images that match the steps to describe the methods. Create a poster for each method, along with photographs or images of examples of each type of quick bread, matched to the proper method.
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Reinforce and Review

- Quick breads are batter breads that are not kneaded.
- Video: How to Make Biscuits: This video features the biscuit quick bread method for making scones.
- Essential Skills: Creaming Method for Quick Breads lists the steps in using the creaming method for quick breads. The creaming method has two advantages: The sugar and fat are well-dispersed in the batter and the air tends to make for a light, fine crumb.
- Essential Skills: Muffin Method for Quick Breads lists the steps on how to use the muffin method to make quick breads. In the muffin method, the dry ingredients are mixed and sifted, then the liquid and egg are added, either separately or combined. When well mixed, the melted shortening is beaten in.
- Essential Skills: Biscuit Method for Quick Breads lists the step on how to use the biscuit method for quick breads. In the biscuit method, the dry ingredients are mixed and sifted and the shortening is cut in with knives or worked in with the tips of the fingers.

Discuss

- How are quick breads prepared?
- The biscuit method is often referred to as the rub-in or cut-in method. Why is that? What other pastry products can be made with this method? (Hint: See 3-2-1 pie dough.)
- The culinary world is typically divided into pastry chefs and “hot foods,” or savory, chefs. What is your preference? Why is it important to have knowledge of both worlds?

Knowledge Check Answers (Page 409)

1. Bagged, bar, dropped, icebox, molded, rolled, and sheet.
2. The creaming method uses solid fat, which is creamed with sugar for three to four minutes, before adding the liquids and dry ingredients. It is important to add ingredients gradually to avoid curdling. The muffin method uses liquid or melted fat, which is mixed with the liquids and added to the dry ingredients. The biscuit method uses solid fat, which is “cut” into the flour to resemble pea-sized pieces, before the liquids are added.

Vocabulary Review

- **Quick breads:** Baked goods not leavened by yeast or eggs; typically, chemical leaveners are used, such as baking powder or baking soda. The quick chemical reaction of these leaveners allows the bread to be baked immediately. Some examples of quick breads are biscuits, muffins, scones, banana bread, soda bread, and even pancakes and waffles.

- **Muffin method:** Method for making quick breads that uses liquid or melted fat, which is mixed with the liquids and added to the dry ingredients.
- **Biscuit method:** Method for making quick breads that uses solid fat, which is “cut” into the flour to resemble pea-sized pieces, before the liquids are added.

Homework Activity: Literacy

Researching Batter Preparation Methods

Students can research and find at least one recipe for each of the four methods presented in Table 19.5. Prepare a menu, with drawings or found images of the design and decoration of each finish product, along with the *mise en place* steps to the recipes. Perform basic cost analysis, and present the menu for the student’s prospective bakery. To make a more in-depth assignment, have students design the commercial baking kitchen, price equipment, and design the service and dining area. Allow students to branch out to other items, like cake decoration, if the interest in pastries is higher.

Homework Activity: Writing

Scones

Scones are different foods in different regions. Find at least two different types of bread products called scones. Describe the products and the regions they are from in a one-page paper.

PAGE 410

CASE STUDY FOLLOW-UP ANSWERS: “CULINARY EXPLORATION”

1. Uptown Grille should probably buy its bread from a trusted vendor. Bread will be used for sandwiches and as a side for soups. Some large kitchens may bake their own and will have their own baker on the task. For this, though, you are talking about a restaurant that turns a lot of covers each day. Uptown Grille is not that large.

If Uptown Grille decides to feature their bread, then they may decide to bake their own. After all, a number of artisan burger places or similar will make the bread because they want a certain specification.

Making bread is not difficult, but it is an extra task, and you need storage to hold the dough when it’s rising.

Making loaves is great, but when you start to try and churn out buns and rolls then the job is constant, so either you employ a baker or buy part-baked bread. A part-baked bread is often nicer than buns that have been standing around since the morning.

2. The formula for baker’s percentage is: $\text{Weight of ingredients} \div (\text{Weight of flour} \times 100 \text{ percent}) = \text{Percent of ingredient}.$

PAGE 411

CHAPTER ACTIVITIES ANSWERS

- **Cookies of the World:** Student answers will vary. It could be an opportunity for students to share a cookie known from their family and cultural history.
- **Violent Reactions:** Student answers will vary. The point of the activity is to show how these leavening agents and elements, in precise quantities, help baked goods rise and have the proper consistency/porous structure through chemical reactions.
- **Wedding Cookies:** You will need to prepare 480 cookies. The recipe yield is 80 dozen, which is 960 cookies. The conversion factor is 0.5 ($480 \div 960 = 0.5$). So, the student should multiply each ingredient in the recipe by 0.5, the conversion factor, which means the recipe is exactly halved.
- **Good Batter, Bad Batter:** This is a good, simple activity. It teaches the importance of time planning and remaining on task while baking. It doesn't work to activate the chemical leavening and then leave the batter sitting to do something else. This is one reason why the baking pans should be prepared and the oven preheated before the batter is mixed.
- **"86" My Baker's Dozen:** The origins of some phrases are still debated, so student answers will vary. The term "86" became popular in the restaurant industry in the early twentieth century and was likely slang for "nix," meaning the kitchen was out of something. A "baker's dozen" being 13 items likely originated in medieval Britain, where King Henry III implemented a law that severely punished bakers who skimmed on their loaves. To be sure to avoid prosecution under this law, bakers started providing an extra, 13th item to make sure they were safe and within the law.
- **It's All about the Fat:** Student answers will vary. They should describe the differences in the finished product resulting from the different fats used.

PAGE 412

EXAM PREP ANSWERS

- | | | |
|---------------|---------------|----------------|
| 1. C (p. 404) | 5. C (p. 403) | 8. B (p. 406) |
| 2. D (p. 407) | 6. D (p. 404) | 9. C (p. 406) |
| 3. D (p. 401) | 7. A (p. 404) | 10. D (p. 405) |
| 4. B (p. 402) | | |

Chapter 20

Teacher's Companion

CHAPTER OVERVIEW

This chapter provides an overview of service and hospitality before delving into the specific details of tending to guest needs in a professional manner.

CHAPTER OBJECTIVES

Explain the importance of customer service to the restaurant and foodservice industry.

List the reasons for making a good first impression, and give examples of how to make one.

Describe special needs that some customers might have.

List ways to obtain feedback from guests and determine their satisfaction.

Explain how customer complaints should be resolved.

ADVANCE PREPARATION

Review	• Chapter 20, pages 420–433 • Unit case study, “Service and Management,” pages 418–419
Contact	• Local front-of-the-house managers from well-established service providers
Prepare	• Copies of local restaurant reviews • Copy of an older etiquette guide

CHAPTER BREAKDOWN

PAGE 422

INTRODUCTION

Discuss

- How do students define service and hospitality? How does this relate to their earlier discussion of positive and negative experiences as guests?
- Professionals are commonly expected to keep their emotions out of the workplace. Is this always possible for foodservice professionals, who are tasked with engaging and, to a certain extent, manipulating their guests' emotions?

PAGES 422–423

DEFINITION OF SERVICE AND HOSPITALITY

Customized Instruction

Learning disabled	Make a list of restaurants where you feel you have had good customer service. Write a sentence or two near each operation to explain why the service was good. Now, create a list with bad customer experiences. Why was the service bad?
Academically gifted	Research customer service programs from local or chain restaurants who have the reputation of providing excellent customer service. Use your research to create a customer service training program geared for the students in your class. Present your findings to your classmates.
ELL	Find clips of video that show good and bad customer service. Use the bullet points on page 422 and page 423 as search engine terms to discover how good customer service benefits the operation. Can you define competitive advantage from your findings? Why is customer service so important? Write notes on what you see in the video clips.

Reinforce and Review

- Every foodservice employee is responsible for providing good service.
- Both hospitality and service are critical to high-quality customer service.
- The benefits of excellent guest service can include increased customer satisfaction and loyalty, an enhanced business reputation, and a positive work environment.
- Customer service often makes the difference between positive and negative guest experiences.
- To stand out from the competition, restaurants and foodservice establishments should provide the best possible guest service.

Discuss

- Which is more important, service or hospitality? Why?
- How can hospitality be measured so that an establishment can tell how well it and its employees are performing?
- What if an employee loves the physical work involved in the restaurant and foodservice industry, but dislikes or is ambiguous toward the concept of service? For instance, a cook may love the stress and challenge of producing excellent food for its own sake, not for the guests who will ultimately enjoy it. What advice would students give such a person?

Vocabulary Review

- **Service:** What restaurant and foodservice employees provide to customers; it is measured by how well everyone in the operation is doing their jobs.
- **Competitive advantage:** The thing that attracts a guest to one operation over another.

Homework Assignment: Literacy

Competitive Advantage

A competitive advantage makes one restaurant more appealing than another. This advantage can take many forms. Location, quality of service, menu options, and price range are just a few.

Working with another student, interview a local foodservice owner or manager and ask what he or she believes are the company's competitive advantages over another restaurant. Why do people choose to visit their restaurant. How does the restaurant capitalize on or publicize these advantages?

Together, prepare a brief oral report for the class on your interview.

Alternate: Find video clips of restaurant entrepreneurs discussing customer service.

PAGES 423–424

FIRST IMPRESSIONS

Customized Instruction

Learning disabled	Create a video or skit to show the dos and don'ts of giving a positive first impression.
Academically gifted	Research styles of customer service around the world. Compare and contrast the research of international service against what you consider to be "American" service. Write an essay to display your findings.
ELL	Use the bullet points on page 423 concerning generating positive and lasting first impressions to find (or create) images that help show the action in the statement. Repeat the activity with the bullet points on 423 for employee positive first impression tips. Create a poster or graphic organizer to manage your findings.

Reinforce and Review

- A strong first impression is one of the least expensive and most effective forms of advertising. It sets the tone for the guest's overall experience.
- Foodservice staff must be conscientious about their work in order to make a positive first impression on guests.
- Some ways to make a positive first impression on a guest include using proper telephone skills, making guests feel welcome and comfortable in the establishment, and displaying courtesy and respect in every interaction.
- The facility's cleanliness and appearance, both inside and out, are important components of a guest's first impression.
- Video: Giving Good First Impressions. This animation shows the steps an employee may take to provide a good first impression to guests.

Discuss

- Why is it important to make a good first impression to guests?
- Besides a positive first impression, what are some other ways a restaurant can advertise itself? How can the first impression be part of a restaurant's overall brand?
- Is the exterior of a foodservice operation just as important as the interior? Why?

Knowledge Check Answers (Page 424)

1. Service is what restaurant and foodservice employees provide. It is measured by how well everyone in the operation is doing their jobs. Hospitality is the feeling that guests take with them from their experience with the operation. It refers to the interaction between a guest and host—the service, care, attention, and even physical environment.
2. The benefits of making a good first impression are: making the guest feel welcome, helping the guest feel confident about the decision to come to the operation, setting the stage for a good dining experience, and making the guest more likely to forgive minor errors.

Homework Assignment: Science

The Science of First Impressions

According to recent psychological research, it takes only one-tenth of a second to form a first impression of a stranger's face. Longer exposures may not significantly change that impression.

Research the science underlying first impressions. Write a one-page paper on how this relates to the restaurant and foodservice industry.

Homework Assignment: Literacy

Match It Up

A restaurant's exterior should relate somehow to the establishment's overall "brand," or identity. For instance, restaurants that serve traditional Mexican food may have roofs of red tile and walls of adobe or stucco, whereas quick-service restaurants may have drive-through windows. In essence, a potential guest should be able to ascertain some idea of a restaurant's menu simply by looking at the restaurant's exterior.

Identify three separate restaurant concepts and design a building exterior for each that helps to extend and reinforce the restaurant's identity. Create a single poster showcasing each building and describing the food served within it. Be prepared to discuss why you feel that the designs you have selected are appropriate to the type of food each establishment sells.

PAGES 425–426
IDENTIFYING GUESTS' NEEDS

Customized Instruction

Learning disabled	Use Table 20.1 on pages 425–426 to find or create images that help to explain the types of guest needs. Make a poster or graphic organizer to show your definitions.
Academically gifted	How do guest needs show up on a menu? Review a selection of 10 menus, and report the different ways that each operation identifies guest needs.
ELL	Review several menus. What types of images do you see to reflect types of guest needs, like a children's menu, or a picture to show the item is gluten-free or vegetarian. Make a list of observations or signals to show your findings.

Reinforce and Review

- Employees should accurately identify a guest's needs, both spoken and implicit.
- Always be respectful and patient when addressing and serving older customers.
- Families with children may require more frequent attention than other guests, as the needs of small children may change abruptly. Servers in particular should know where items to accommodate these younger guests can be found.
- Customers may have special dietary needs, so servers must know exactly what ingredients are used in each dish. Employees should accommodate guest requests for specially prepared dishes whenever possible, but servers should always check with the kitchen to make sure that the needs can be met before the table's order is finalized.

Discuss

- How can any special needs that guests might have be accommodated without affecting the quality of other guests' experiences?
- Almost every person will have some sort of special need at some point in his or her lifetime. How do service professionals learn to look past these needs to see their guests as people, not problems?
- Sometimes, guests do not mention their needs or desires outright. How can a service professional intuit and accommodate these needs?
- Do true service professionals ever take risks with their guests' dietary needs? How can both front-of-the-house and back-of-the-house employees ensure that all guests with food sensitivities or allergies are properly accommodated?

Vocabulary Review

- **Dietary needs:** Special requirements people have regarding what foods they can or cannot eat; some restaurant guests may not be able to eat certain food items due to allergies or religious restrictions, or simply by choice.
- **First-time guests:** Guests that are experiencing an operation for the first time and might be unfamiliar with the menu or any special touches that the particular operation offers; these guests might enjoy a brief introduction to the facility and its menu, and servers should plan to spend some extra time with them.
- **Americans with Disabilities Act (ADA):** U.S. law that prohibits discrimination against individuals with disabilities in all places open to the public.

Knowledge Check Answers (Page 426)

1. Age (elderly with hearing, walking difficulties), families with young children, dietary needs (food allergies), first-time guests, special occasions (birthdays, anniversaries), foreign-language customers, and people with disabilities.
2. The server must know the ingredients in each dish. If the server is unsure, the server must check with the chef.

PAGES 427–428 GETTING FEEDBACK ON GUEST SATISFACTION

Customized Instruction

Learning disabled	Work with the foodservice director to develop a survey for students to complete at lunch for a particular item or service in the school cafeteria. Give the survey to students, and put together a list of results. Note: Multitier grouping may be appropriate to make this a whole-class activity.
Academically gifted	Develop a focus group, comment card, and survey for the foodservice director to review lunch menu items. Execute each, and write a report comparing and contrasting the method of feedback and the results.
ELL	Find clips of video that show customer surveys, focus groups, and comment cards (or samples of surveys and comment cards). What do you see? Take notes on your observations.

Reinforce and Review

- The simplest and most obvious way to obtain guest feedback is to ask the guest throughout the meal.
- Problems mentioned in comment cards should be taken seriously and resolved as quickly as possible.
- All staff members should be made aware of positive and negative feedback from customers. Those mentioned by name should be either praised or trained, depending upon the comment.
- Focus groups can be conducted with either guests or employees, as both groups are likely to have suggestions for improving customer service. Involving employees, without fear of retribution, can help cement their relationships with the workplace and contribute to a positive work environment.
- Managers should encourage staff members to take criticism constructively and use it to improve individual and team performance.

Discuss

- How is obtaining feedback from guests similar to or different from receiving feedback from a manager or peer?
- Encourage students to discuss which feedback strategies might be useful in different types of establishments.
- How can guest service be measured? What are some useful benchmarks?
- How can employee focus groups affect staff morale and the work environment? How might managers be affected?
- How can a mystery shopper program strengthen a restaurant or foodservice establishment? How can such a program expose problems?

Vocabulary Review

- **Comment cards:** Quick surveys that guests complete noting their level of satisfaction with the food and service at an establishment.
- **Surveys:** Series of questions asked of guests to determine their level of satisfaction with an establishment; surveys are similar to comment cards, but often include more open-ended questions, such as, “How can we improve our service?” and “What would make you come back?”
- **Focus groups:** Guests or employees who meet as a group to talk with managers about possible improvements in service or other areas; employees in a focus group should feel free to make comments about the operation without fear of angering management and with the assurance that no one will repeat anything said outside the meeting.
- **Mystery shoppers:** People hired by an operation to visit and report on their experiences and impressions of a particular foodservice operation while posing as regular guests. These shoppers provide more in-depth feedback than comment cards or surveys, especially if they have been trained on an operation’s systems and procedures.

Knowledge Check Answers (Page 428)

- 1. Operations can collect customer feedback by asking customers during their dining experience and through comment cards, focus groups, surveys, and mystery shoppers.
- 2. A comment card is a quick survey that guests complete that notes their level of satisfaction with the food and service provided. Surveys are similar to comment cards, but these typically include open-ended questions intended to elicit more detailed information.

Homework Activity: Writing

Focus Groups

How are focus groups similar to discussion groups? How do each provide feedback? In what ways can each increase learning opportunities?

Discuss these questions with a small group.

PAGES 429–430 RESOLVING GUEST COMPLAINTS

Customized Instruction

Learning disabled	Watch videos that show the correct and incorrect way to handle guest complaints. Take notes on your observations. What seems to work? What does not?
Academically gifted	Research the concept of the financial cost of unhappy guests, using the Did You Know sidebar on page 429. Write an essay with your findings, and include a mathematical representation of the data (in graphs or infographics).
ELL	Use the methods, listed as bullet points on page 429, to effectively resolve problems. Find or create images that help show the action of the different points. Write down each bullet, and place the images below, in a graphic organizer.

Reinforce and Review

- Any unhappy customer is bad for business, so every operation needs an organized system for handling and resolving all guest complaints.
- It is important that managers support employees’ decisions when they authorize them to resolve complaints. This reinforces the trust relationship between the two and helps establish a positive work environment.
- Every staff member must be trained on how to address customer complaints with respect and patience.
- Proactively addressing complaints can turn dissatisfied customers into repeat guests. Staff should never ignore or avoid a dissatisfied guest, and they should notify managers of all guest complaints.

Discuss

- How can customer complaints, whether online or in the establishment, have positive results? What role does communication play in addressing and assuaging guest concerns?
- Some establishments require the manager to resolve complaints, while some allow nonmanagerial staff to handle problems. How might the two types of workplace differ? How might employee relations with their managers and with the establishment itself differ from place to place?
- Is the customer really always right? How far must foodservice staff go in order to resolve complaints? Are there some guests who can't be satisfied?
- Why might some guests choose not to complain to a restaurant or foodservice establishment about problems they have experienced?
- How does being specific when asking about guest experiences contribute to a server's credibility and the guest's perception of the quality of service?

Knowledge Check Answers (Page 430)

1. It is important to recognize when a guest is upset so that the problem can quickly be resolved.
2. Students should list four of the items mentioned on page 429.

PAGE 431

CASE STUDY FOLLOW-UP ANSWERS: "SERVICE AND MANAGEMENT"

1. Student answers may vary but should address the role of employee training and customer feedback.
2. Steve and Raoul will need to monitor their staff, provide ongoing training, and solicit customer feedback via comment cards, surveys, focus groups, and mystery-shopper programs.

PAGE 432

CHAPTER ACTIVITIES ANSWERS

- **"Hello, and Welcome to...":** These scripts should be brief and to the point. Students should also describe how they would like their employees to communicate nonverbally with their guests.
- **Allergies:** Students should research a food allergy or sensitivity to learn about how people are affected by certain ingredients.
- **The Cost of Complaints:** The complaints reached 4,391 people.
- **Restaurant Wars!:** Student answers will vary, but students should be sure to choose restaurants of a similar category that compete in the same market segment.
- **Identifying a Guest's Needs:** Student answers will vary, but observers should note where problems could occur between the guest and annoyed server. The point of this activity is to convey how important it is for staff to be attentive to guests' dietary restrictions. An annoyed and inattentive server could bring serious consequences to an operation if a guest's dietary restrictions are not properly handled.
- **I Spy . . . a First Impression!:** Students should describe the first impression of the selected restaurant and how it affects their ideas about what the dining experience might be like.

PAGE 433**EXAM PREP ANSWERS**

1. C (p. 422)

2. C (p. 423)

3. C (p. 424)

4. A (p. 424)

5. C (p. 425)

6. C (p. 428)

7. B (p. 427)

8. B (p. 429)

9. D (p. 423)

10. C (p. 429)

Chapter 21

Teacher's Companion

CHAPTER OVERVIEW

This chapter describes typical staff responsibilities, service tools, and service styles. The chapter also explains some particular service activities, such as taking orders and processing payments.

CHAPTER OBJECTIVES

- 21.1 Describe service staff roles, and list the duties and responsibilities of each.
- 21.2 Identify various server tools and the correct way to stock a service station.
- 21.3 Outline the process for receiving and recording reservations and special requests.
- 21.4 Demonstrate taking orders at the table, beginning with the greeting.
- 21.5 Define suggestive selling, and give examples of how to do it.
- 21.6 Identify basic guidelines for serving alcohol to guests.
- 21.7 Describe the four traditional styles of service: American, French, English, and Russian.
- 21.8 Identify contemporary styles of service.
- 21.9 Demonstrate setting and clearing items properly.
- 21.10 Prepare various types of hot beverages.
- 21.11 Demonstrate service procedures for hot beverages.
- 21.12 Prepare various types of cold beverages.
- 21.13 Demonstrate service procedures for cold beverages.
- 21.14 List methods for processing payment.

ADVANCE PREPARATION

Review	Chapter 21, pages 434–463 Unit case study, “Service and Management,” pages 418–419
Contact	The state liquor authority or servsafe.com for the ServSafe Alcohol coursebook and online course Local front-of-the-house manager to present on service techniques (fine dining is ideal) A barista or manager from a local coffee shop or a Starbucks to describe beverage preparation techniques
Prepare	Copies of local restaurant reviews Place settings and linens to practice setting tables

CHAPTER BREAKDOWN

PAGE 436

INTRODUCTION

Discuss

- How do dining room staff members play a major role in determining a guest’s experience?
- How can standard transactions, such as taking guest orders or processing payments, be opportunities to demonstrate high levels of customer service?
- What types of service styles have students experienced? What style seems appropriate for what type of environment? How can different service styles affect a guest’s meal and his or her overall impression of a restaurant?

PAGES 436–443

SERVICE STAFF RESPONSIBILITIES

Customized Instruction

Learning disabled	Create a poster with images of the various positions and duties of the front-of-the-house members. Match the service tools with the various positions.
Academically gifted	Research the history of fine dining restaurants (refer back to chapter 1 for ideas, like Delmonico’s). Report your findings in an essay.
ELL	Find video clips of the front-of-the-house positions and the various tools. Search for activities like taking a table-side order, proper left-right placement of items in front of a guest, and taking reservations and requests. What do you see? Take notes, comparing the video clips to the animation videos shown by the instructor.

Reinforce and Review

- The formal service organization traditionally involves a number of front-of-the-house team members, such as the maître d’hôtel and the captain, that are less commonly used in less formal service structures. No matter how an establishment organizes its staff, all team members must understand their roles and responsibilities.

- Video: Service Staff Responsibilities. This animation shows the different responsibilities and duties for the various service staff employees in an operation.
- Common service tools include a clean towel, a lighter, a corkscrew, a working pen with blue or black ink, an order pad or blank notebook, and a crumber.
- A service station prevents servers from having to leave the dining room to obtain necessary items during service.
- An effective reservation procedure begins with having a specific place to record reservations and special requests.
- Video: Left, Right, Left: This animation shows the proper way to perform certain tasks when serving guests table-side.
- Essential Skills: Left, Right, Left—Proper Placements for Table Service lists the tasks to be performed table-side. How does conducting table maintenance tasks from specific sides of a guest accommodate the guest's needs?
- Video: Reservations and Requests: This animation shows the proper method and the reasoning for taking reservations and requests.
- In addition to welcoming guests, greeters must also evaluate and determine the customers' specific needs for the current visit.
- Video: Taking a Table-Side Order: This animation shows the proper procedure for taking a table-side order from guests in the front of the house, as a server.
- Essential Skills: Taking a Table-Side Order lists what a server should write down when writing table checks. Why is it important for servers to record desired cooking temperatures and other requests accurately, in terms of both customer desires and kitchen needs?
- The success of suggestive selling depends on product knowledge, effective communication skills, and sales training.

Discuss

- How can some of these positions be combined or eliminated in smaller restaurants without affecting the quality of guest service?
- How can a properly managed service station improve a server's efficiency and the guests' experiences? How can a poorly managed one complicate the service period?
- How does the reservation process set the tone for the guest's actual visit? How can the process reinforce and reflect the restaurant's identity?
- What can a greeter do to make or break a guest's experience?
- How can taking a guest's order be an opportunity to learn more about the guest? How is it an opportunity to reinforce the restaurant's identity?
- How can professional staff members engage in suggestive selling without making guests feel uncomfortable? What issues of delicacy and discretion may arise?

Vocabulary Review

- **Maître d'hôtel:** In a formal service organization, the person who is responsible for the overall management of service.
- **Headwaiter:** In a formal service organization, the person who is responsible for service in a particular area, such as a banquet room or dining room.
- **Captain:** In a formal service organization, the person who is responsible for a server area of about 15 to 25 guests.
- **Front waiter:** In a formal service organization, the person who assists the captain and has one to two years of experience.
- **Apprentice:** In a formal service organization, a person who is a server in training.
- **Floor manager:** Person in charge of the operation during a particular shift and who supervises a team of servers.
- **Server:** Front-of-the-house staff member who serves food to guests and who is responsible for a specific section of the dining room.
- **Food runners:** People who sometimes assist servers in bringing food from the kitchen to the tables.
- **Busers:** Also known as dining room attendants, busers assist with the cleaning up and resetting of tables.
- **Service tools:** Tools often carried by a server, which may include a hand towel, a corkscrew, change, a pen, an order pad, and a crumber (which is used to neatly gather and clear crumbs and debris from a table cloth after entrée service).
- **Service station:** The area in which an operation keeps additional items such as napkins, silverware, cups and saucers, condiments, menus, and water glasses; a service station prevents servers from having to go to the back of the house to get these tools.
- **Serving utensils:** Items used to serve food, such as large serving spoons for casseroles and vegetables, tongs for pastries, etc.
- **Suggestive selling:** Recommending items to guests in a way that maximizes guest satisfaction and increases the average check, resulting in more profits. The success of suggestive selling depends on product knowledge, effective communication skills, and sales training.

Knowledge Check Answers (Page 441)

1. A service station prevents servers from having to go to the back of the house to get these tools.
2. Guest name, guest contact information, date and time of arrival, number of people in the party, any special needs or requests the guest may have.
3. Hosts/hostesses are greeters for the restaurant. They maintain the flow in the restaurant by seating guests. They regulate the number and frequency of people being seated and ensure that the waitstaff have guests that are seated evenly. Finally, they are also an important contact point for guests, as they are the first people with whom the guests will interact.

Homework Activity: Math

Snow Fun

Gemino's, a fine-dining restaurant, has 80 seats and serves an average of 120 people on a Tuesday night during the winter. Therefore, managers usually schedule three servers to work from 3:00 p.m. until 11:00 p.m. and three servers to work from 4:00 p.m. until 12:00 a.m. Each server earns \$8 per hour, plus tips. On a standard Tuesday night, tips average 18 percent of the check average, which is \$42.50 for an individual. All the servers share tips equally.

On this particular Tuesday, snow begins to fall at 2:00 p.m. By 5:00 p.m., all the servers have arrived for work and have begun service, but many confirmed diners have called to cancel—so no guests have yet arrived. The dining-room manager now predicts that only 40 customers will arrive during the service period.

The manager decides to send three servers home at 6:00 p.m. The servers who leave are those who began work at 3:00 p.m. None of them has served a table, so none of them has received tips. The other three servers, who began work at 4:00 p.m., leave work at 10 p.m., after having served the 40 customers and dividing the tips equally among themselves.

- How much dining-room revenue did Gemino's originally expect to earn on this Tuesday night? [\$5,100]
- How much dining-room revenue did Gemino's actually earn on this Tuesday night? [\$1,700]
- How much money did the servers arriving at 3:00 p.m. originally expect to earn? [\$217 each]
- How much money did the servers arriving at 3:00 p.m. actually earn? [\$24 each]
- How much money did the servers arriving at 4:00 p.m. originally expect to earn? [\$217 each]
- How much money did the servers arriving at 4:00 p.m. actually earn? [\$150 each]

Homework Activity: Science

Float Like a Butter

Have you ever had a day when everything went wrong? Perhaps something little went awry, and you didn't think much about it. But then more things started to go wrong, and everything snowballed to create a truly terrible day.

The butterfly effect is a concept in chaos theory that suggests that apparently insignificant events may trigger significant events. How can it relate to the restaurant and foodservice industry? Research this concept and write a one-page paper describing your findings.

Homework Activity: Literacy

Designing a “Flag”

Flags are devices used to alert staff members to special guest needs. For instance, a diner celebrating a birthday might have preordered a specialty cake to be cut and served as dessert, so both kitchen and dining-room staff need to be aware of this. Flags aren’t actual flags. They can be slips of paper, notes in a computer, or anything else that accurately communicates the special need.

Design a flag for your restaurant and illustrate it on a sheet of paper. Be prepared to discuss why you selected the particular design, how you decided what information it contains, and how the message is conveyed to all necessary staff members.

PAGES 443–445
ALCOHOL SERVICE

Customized Instruction

Learning disabled	Why is it important to serve alcohol responsibly? Make a list of your thoughts.
Academically gifted	Take the online course ServSafe Alcohol, if possible. Report your notes and observations in a presentation for the class. Follow up your learning by researching the alcohol laws in your state and local area.
ELL	Search for videos on responsible alcohol service. What do you see? Take notes on your observations.

Reinforce and Review

- Managers and staff must understand the effects of alcohol and be familiar with all relevant laws. Each state’s liquor board or liquor authority develops and enforces its own regulations for alcohol service, which vary widely from state to state.
- Dram shop laws allow an injured person, who may not have even entered the establishment, to sue the business, its owners, and its employees for injuries caused by a guest who was drinking there.
- The amount of alcohol absorbed into a person’s bloodstream is called the blood alcohol content, or BAC. In all 50 states, it is illegal to drive with a BAC of 0.08 or higher.
- In all 50 states, the minimum age to purchase alcohol is 21, although some states allow minors to consume alcohol.
- The best way to ensure that customers are of legal age to drink is to check their identification. All states add distinguishing features to minor identification cards so that sellers and servers of alcohol can immediately realize that the person is underage.

Discuss

- Why might sellers or servers of alcohol face criminal charges for certain activities, instead of civil penalties? What are the potential ramifications of these activities for one's career? What are the ramifications for one's life?
- How can laws restricting how and by whom alcohol is served affect hiring decisions in foodservice establishments?
- How can employees tell who should and should not be asked to show identification before ordering alcohol? How might guests react when told they cannot be served?
- How can documenting an alcohol-related incident and detailing the establishment's response protect a restaurant from financial hardship, legal burdens, and injury to its reputation?

Knowledge Check Answers (Page 445)

1. Employees can effectively execute suggestive selling by talking about daily specials, using active and descriptive words to explain menu items, and showing enthusiasm for the choices guests make.
2. Dram shop laws create special liabilities for establishments with liquor licenses and their employees. These laws allow an injured person, who may not even have been in the establishment, to sue the business, its owners, and its employees for injuries caused by a guest who had been drinking there. In states with dram shop laws, servers may be sued or even face criminal charges for serving alcohol to guests who are or appear to be intoxicated.
3. Driver's license, state ID card, military ID, and passport.

In-Class Activity: Math

BAC Levels

Blood alcohol content, or BAC, is a measure of how much alcohol has been absorbed into a person's bloodstream. A BAC of 0.10 means that there is about one drop of alcohol present for every thousand drops of blood.

Calculate how many drops of alcohol are present per thousand drops of blood at the following concentrations:

- 0.05 ($\frac{1}{2}$ drop of alcohol per thousand drops of blood)
- 0.08 ($\frac{4}{5}$ drop of alcohol per thousand drops of blood)
- 0.12 ($1\frac{1}{5}$ drops of alcohol per thousand drops of blood)
- 0.15 ($1\frac{1}{2}$ drops of alcohol per thousand drops of blood)
- 0.20 (2 drops of alcohol per thousand drops of blood)
- 0.25 ($2\frac{1}{2}$ drops of alcohol per thousand drops of blood)
- 0.30 (3 drops of alcohol per thousand drops of blood)

Homework Activity: Science

Alcohol's Effect on the Human Body

How is the amount of alcohol in one's bloodstream directly connected to one's health? Research the physiological effects of alcohol on the human body, and write a one-page report on your findings.

Homework Activity: Writing

Legal Eagles

What laws govern the sale and service of alcohol in your community? Who may serve or sell alcohol, and who may legally consume it? What laws affect restaurants that serve alcohol, and what penalties exist for over-service to a customer or service to a minor?

Research local and state regulations to answer these questions, as well as any other information you think is relevant. Discuss your findings in a one-page report.

Homework Activity: Writing

Liquor Laws

State and local liquor laws vary tremendously. Many areas, for instance, are "dry," which means liquor cannot be legally sold within their boundaries. Other areas regulate the types of alcohol that can be sold in different establishments at different times of day. Some states require the sale of "package" liquor, or alcohol sold in a bottle instead of as a drink, to be conducted only by state agencies.

Research the history of your state's liquor regulations. When were they first established, and by what entity? How have the laws changed since then? How and by whom are they enforced? What historical factors, such as Prohibition, may have played a role in your state's laws?

PAGES 446–454
SERVICE STYLES AND SETUPS

Customized Instruction

Learning disabled	Find or create images of the tools for service. Create a poster to show the different types of service, using the different tools.
Academically gifted	Create a menu designed for each type of service, including a drawing or illustration of the proper table setting for each course, for each type of service.
ELL	Make table settings for the four types of service. (If possible, watch a video, then demonstrate with physical tools. If tools are not all available, have the student create life-size cutouts of the tools to practice setting for each type of service.)

Reinforce and Review

- Traditional service styles include American, Russian, French, and English, each of which may be used in an American restaurant.
 - American service is widely used, since it is easy and inexpensive to provide and requires few tools and utensils.
 - French service is the most elegant style of service, but it is expensive to provide and therefore used less often.
 - English service, also known as family-style dining, is the simplest and least expensive service style and is becoming more popular in the United States.
 - Russian service is the most formal and is quite expensive, so it is used less often today.
- The four basic knives used by diners are the dinner knife, butter knife, steak knife, and fish knife. Steak and fish knives are presented to those who order dishes requiring their use.
- Drinking glasses come in an assortment of shapes, sizes, and materials.
- China, or dinnerware, is the most important part of a table setting.

Discuss

- How do the four traditional service styles differ from one another in terms of guest perception and cost to provide?
- Do all restaurants need to have all these types of utensils? How does a menu determine which implements are required and thereby control costs?
- How can the use of uncommon service utensils add to a restaurant's ambiance or to guest perceptions of service? For instance, the presence of shell crackers usually signals that the restaurant has made a serious commitment to high-quality crustaceans. What does that indicate to guests?
- How does the shape of each utensil reflect its purpose?
- How does the shape of a glassware item depend on what it is intended to contain?

Vocabulary Review

- **Traditional service:** There are four traditional service types, each with matching menu, theme, and décor: American, French, English, and Russian.
- **American service:** Traditional style of service in which food is arranged on plates in the kitchen by cooks and brought directly to the guests' table by the server. The complete meal is on one plate. American service has been adopted by many operations because it is one of the easiest service styles, provides a consistent-looking product, and uses the fewest tools and utensils.
- **French service:** Traditional service style that is typically considered the most elegant. Servers present the food to guests from a table-side cart, called a *guéridon*, which holds food or liquid items that will be served to guests, as well as dishes and utensils the servers and guests may need. The food is kept hot by a warming unit in the cart, called a *réchaud*. The finishing touch to the food is done table-side to create a memorable moment for the guest, demonstrating great culinary arts and service skills. This type of service is expensive because of the cost of the carts and the additional skills required of the servers.

- **English service:** Also known as family-style dining, English service is the simplest and least expensive of the traditional service types. In English service, bowls and platters of food are placed on the table and a seated host or hostess places the food onto plates. The host of the table then serves the meal on the plates for the other diners, or diners pass the dishes around the table so they can serve themselves.
- **Russian service:** This style is the most formal service style. All food preparation is done in the kitchen, and the bowls and platters of food are then brought on a cart to guests at the table. Servers hold the bowls and platters as they serve the food to each guest. Service platters hold food for tables of up to eight guests, and they are very heavy (in previous times they were made of pure silver) and very hot. Servers need to go through substantial training before being able to serve Russian style; the server is essentially in charge of making the plate look perfect.
- **Guéridon:** Table-side cart used in the French service style that holds food or liquid items that will be served to guests, as well as dishes and utensils the servers and guests may need. Servers present food to guests table-side from the guéridon.
- **Réchaud:** In the French service style, this is a warming unit that keeps food hot in the table-side cart (guéridon).
- **Family-style dining:** Another name for the English service style, in which bowls and platters of food are placed on the table and a seated host or hostess places the food onto plates and serves the meal for the other diners, or diners pass the dishes around the table so they can serve themselves.
- **Quick-service dining:** An easy and fast way to dine that typically involves no servers; guests help themselves to food set up in food bars or order at a counter. Other forms of quick-service dining include drive-through service, buffet service, carry-out service, vending service, and cafeteria service.
- **Fast-casual:** Relatively modern terminology describing a restaurant that falls between full service and quick service. Also called quick-casual or limited-service restaurants, these operations are typically distinguished by service type and food quality. Fast-casual restaurants are often perceived to offer better-quality food and a more upscale dining area than quick-service restaurants, but with less expensive menu items than full-service restaurants. Pizza restaurants can fall into this category.
- **Butter knife:** Knife that is used to butter bread and is not sharp.
- **Dinner knife:** Knife that is used for all entrées and main courses and is not sharp.
- **Fish knife:** Knife that is used only to fillet and cut fish.
- **Salad knife:** Knife that is used for salads and is not sharp.
- **Steak knife:** Knife that has a serrated edge and is used to cut beef.
- **Cake fork:** Fork with only three tines that is used to eat cakes, tortes, pies, and pastries.
- **Dessert fork:** Fork that often has a broader tine and can cut through a soft cake or other pastry like a knife.
- **Dinner fork:** Fork that is used for all entrées and main courses.
- **Fish fork:** Fork that is used for fish.
- **Oyster fork:** Small, round fork used for both oysters and clams.

- **Salad fork:** Smaller than the dinner fork, the salad fork is used for salads, appetizers, desserts, fruit, smoked fish, and other delicate foods.
- **Snail fork** or **Lobster fork:** Small, thin fork used for shellfish.
- **Bouillon spoon:** Soup spoon with a rounded spoon head, used for clear soups or broths.
- **Coffee spoon:** Smaller than a soup or sauce spoon, this spoon is used not only with coffee, tea, and hot chocolate, but also for fruit cocktails and ice cream.
- **Espresso spoon** or **demitasse spoon:** Much smaller than a coffee spoon, this spoon matches small espresso cups.
- **Grapefruit spoon:** Spoon with a jagged tip for carving into grapefruit.
- **Sauce spoon:** Spoon used for dishes in which the sauce is served on the side.
- **Soup spoon:** Spoon with an oval spoon head, used for cream soups and long strands of pasta.
- **Sundae spoon** or **iced tea spoon:** Spoon with an especially long handle to dip into a deep sundae or stir large glasses of iced tea.
- **Snail tongs:** A specialized utensil for holding a snail shell so the snail can be removed.
- **Shell cracker:** Tool that is usually two hinged metal levers and is used to crack the hard, thick shells of lobsters and crabs.
- **China:** Also referred to as dinnerware, this includes the plates and bowls that make up a large part of the table setting.
- **Bread-and-butter plate:** Plate used for bread and butter, and also as an underliner for jams and other condiments that may spill easily.
- **Charger:** Also called a service plate, this is a larger plate used during full-course dinners or to dress up special events.
- **Dinner plate:** Ten to twelve inches across, the dinner plate is used for all kinds of entrées and main courses, and as an underliner for smaller plates and bowls.
- **Monkey dish:** A very small, shallow bowl, sometimes used for relishes or dipping sauces.
- **Salad plate:** Much smaller than a dinner plate, usually seven or eight inches across, the salad plate is used for desserts and appetizers as well as salads, and as an underliner plate for gravy, sauceboats, and sundae glasses (served with a napkin or paper doily to prevent slipping).
- **Soup bowl:** Smaller and deeper with no flat edge, and used only for soup, these bowls or cups are sometimes equipped with lids (individual tureen) or a single handle for easier service. Soup bowls and cups are served on underliners.
- **Soup plate:** Flat around the edge, this plate has a dip in the center to hold soup, pastas, stews, and shellfish.
- **Tureen:** A large covered bowl used to serve food such as soup.
- **Snail plate:** Plate with six or twelve indentations for holding snails.

- **Gravy boat:** A boat-shaped bowl that has a special lip or spout to prevent spilling when pouring sauce onto a plate.
- **Finger bowl:** A small bowl filled with water and often a citrus fruit slice (lemon or orange) that is used to clean the fingers after eating, especially with messier meals such as shellfish and ribs.

Knowledge Check Answers (Page 454)

1. In American service, food is arranged on plates in the kitchen, and servers transport the food to the guests' table. It is one of the easiest service styles and requires the fewest tools and utensils. In French service, servers finish cooking the food in front of the guests, and then serve them; this style is very elegant, but is also very expensive, requiring both a great deal of equipment and a number of highly trained service staff. In English service, or family-style dining, food is placed on the guests' table in platters and bowls, and the guests serve themselves or are served by a member of the dining party. This method is simple and inexpensive, so it is gaining in popularity. Finally, in Russian service, food is arranged on platters in the kitchen, and servers arrange food on guests' plates; like French service, this style is expensive in terms of equipment and staff costs.
2. Contemporary service is also known as "quick-service," an easy and fast way to dine that typically involves no servers; instead, guests help themselves to food or order from a counter or drive-through window.
3. A charger is used underneath the plate on which food is served. A dinner plate is used for all main courses. A salad plate is used for desserts and appetizers as well as salads. The bread-and-butter plate is used for jams and other condiments. A soup plate is used for soup, pasta, and clams. A soup bowl is used for soups.

Homework Activity: Literacy

Glassware

Figure 21.14 displays a variety of glassware used in foodservice establishments. Select one and research its uses. How does its shape reflect its primary use?

Prepare a brief oral report on your findings.

In-Class Activity: Science and Math

Sugar in Soda

Have students list their top five drinks of choice (most likely, sugary sodas or other drinks may end up on the list). Have students record the amount of sugar from the nutrition label (in grams) on a chart. Then, using a digital scale, have students measure the amount of sugar for each beverage in grams, to show how much sugar is contained in each beverage. (For a bonus, have students convert the metric gram unit into ounces: 1 gram = 0.035274 ounces.)

Customized Instruction

Learning disabled	Make a list of your favorite beverages. Make a note next to each item of the ways you think they should be served.
Academically gifted	Research the cost of a commercial espresso machine. Design a coffee and beverage shop geared to teens, create a menu and cost and price items—including the equipment and tools.
ELL	Visit a coffee shop or watch video clips of baristas making hot and cold drinks. What do you see?

Reinforce and Review

- Hot beverages include coffee, tea, and hot chocolate. Cold beverages include iced tea, soft drinks, bottled water, and nonalcoholic beverages.
- All beverages in their hot form should be served within an hour of brewing.
- All cold beverages should be served quickly and correctly.
- Essential Skills: Making Hot Tea with Tea Leaves lists the steps for making tea with tea leaves.

Discuss

- Which hot beverages do students enjoy? Why?
- Does hot chocolate or hot cocoa have as much as caffeine as a coffee drink?
- Why is bottled water the most popular cold beverage in the United States today?
- Making “foam” designs in espresso drinks with steamed milk is an art form—there are even competitions for the best designs. Discuss this, and watch clips from competitions or search for designs that you like the best.
- What are the effects of caffeine on the body? Does age play a role? Are there risks?

Vocabulary Review

- **Coffee:** Usually hot, caffeinated beverage made from roasted coffee beans. Coffee beans are the berries of a tropical shrub that are then roasted to develop flavor; the degree of roasting, which can be light, medium, or dark, affects the flavor of the coffee. Americans generally prefer medium roast, while dark-roast coffee is popular in Europe. Flavored coffees such as hazelnut, almond, mint, chocolate, blueberry, and strawberry are also available.
- **Tea:** Usually hot, caffeinated beverage made using tea leaves. Tea is generally less expensive than coffee, although some rare teas can be quite expensive. One cup of tea has about half the caffeine contained in a cup of coffee.
- **Black teas:** Darker teas made from tea leaves that have been fermented.

- **Green teas:** Lighter teas made from tea leaves that have not been fermented.
- **Hot cocoa:** Hot chocolate drink made from cocoa powder or shaved chocolate and sugar stirred into heated milk or water. The terms “hot chocolate” and “hot cocoa” are often used interchangeably, but there is a difference: hot chocolate is made from actual chocolate bars, but hot cocoa is made from the powder of the cacao bean. Hot cocoa is usually made from its instant form—a dry mix of cocoa powder, sugar, and dry milk—mixed with hot milk or water. Hot cocoa drinks can be topped with marshmallows or whipped cream.
- **Hot chocolate:** Hot chocolate drink made from actual chocolate bars, as opposed to hot cocoa, which is made from cocoa powder or shaved chocolate and sugar stirred into heated milk or water.
- **Caffeine:** A stimulant found in beverages such as coffee and tea.
- **Iced tea:** Cold version of tea that is made by brewing a large portion of hot tea, adding either sugar or sugar syrup to the hot tea, thoroughly mixing it to ensure that all of the sugar has dissolved, and then chilling it through the addition of ice. This procedure should be treated as a recipe with measurements to ensure the iced tea is made the same each time for guest satisfaction.
- **Soft drinks:** Popular cold drinks, also called sodas or fountain drinks. Fountain drinks gain their name from the fountain dispensers that mix different types of sodas from syrups with carbonated filtered water. Sodas should be served in a glass half filled with ice to allow for proper temperature. This will not dilute the drink quickly and will lower the number of refills needed.
- **Nonalcoholic drinks:** Drinks, such as lemonade, that are an alternative to sodas and alcoholic drinks. They can be made with fresh fruits and vegetables and tend to contain less sugar than soda. Since they can be made fresh, nonalcoholic drinks offer seasonal opportunities for menu changes and give the restaurant a signature drink. Recipes should be used to maintain drink consistency and guest satisfaction.

Knowledge Check Answers (Page 458)

1. Hot coffee should be held for one hour or less.
2. The cup and saucer need to be served on the right, in front of the guest, with the handle facing four o'clock.
3. Popular cold beverages served at foodservice operations include iced tea, soft drinks, bottled water, and nonalcoholic beverages.

PAGES 459–460

PROCESSING PAYMENTS

Customized Instruction

Learning disabled	Make a video or skit of the steps to follow when completing credit card transactions and processing a credit card during table-side service, listed in bullet points and as a numbered list on page 459.
Academically gifted	Research the history of credit cards in America. How has the process changed for completing transactions? Write and present your findings.
ELL	Watch a video of an employee processing a credit card, at the register and as a server table-side. What do you see?

Reinforce and Review

- For cash transactions, cashiers accept payment directly from the guest, restate the total owed, and count out the change. If servers are involved in this transaction, the payment and change to be returned are usually calculated behind the scenes, and the change is then returned to the guest's table.
- Credit card machines display authorization or rejection notices, so servers and cashiers can determine whether a legitimate payment has been made.
- If there is uncertainty about the legitimacy of a credit card, the guest may be asked politely to present an additional form of identification.
- When serving seated customers who have paid by credit card, be sure to secure the signed copy of the credit card receipt immediately after the customers have left the table to prevent identity theft.

Discuss

- How can the availability of credit and debit card machines in an establishment affect its guests? Why might guests choose to patronize or avoid such businesses? How does this relate to the earlier discussion of competitive advantage in Section 1?
- Why should servers and other staff members always thank guests for their patronage? If the visit was disastrous, might the guests interpret this as hypocrisy? How can professional staff members project a sincere, credible image?

Knowledge Check Answers (Page 460)

1. Make change away from the table and then return it to the guest.
2. Present the check at the table. Collect payment from the guests. Process payment. Return the change or credit card receipt and credit card.

PAGE 460

CASE STUDY FOLLOW-UP ANSWERS: "SERVICE AND MANAGEMENT"

1. To train servers:

For hot beverages: After taking the beverage order, serve the beverages quickly and correctly. For all hot beverages, the restaurant needs to determine how they will be served (either dispensed table-side or brought over in cups ☒ filled). In either case, the following service concerns need to be addressed:

- The cup and saucer need to be served on the right in front of the guest with the handle facing four o'clock.
- Teaspoons (if not already on the table) need to be placed on the right side of the guest.
- Hot water needs to be served with tea, if servers are dispensing table-side.
- Sweeteners and milk or cream containers (handles to the right) are placed on the table (if not already present).
- In some operations, a small dish is placed on the table to collect used tea bags, sugar packets, etc. to prevent them from touching the table.

Servers should check with guests periodically to see if they need refills. If a refill is needed, refer back to the restaurant's policy on how to perform this service. Some restaurants bring a completely new cup and saucer; some refill on the table, etc. Check to see that enough milk, cream, and sweeteners are still available for the guest (or refill those, if necessary).

For cold beverages: As with hot beverages, after taking the beverage order, serve the beverages quickly and correctly. Traditionally, most cold beverages are dispensed at the server's area and brought to the table. However, please ensure that the following service procedures are done:

On tables without tablecloths, either a coaster or napkin is placed in front of the guest, preferably to their right.

- The drink is placed on the napkin or coaster.
- Either a teaspoon, iced tea spoon, or straw is served with the drink (as needed).
- Appropriate sweeteners are placed on the table (if not already on the table).
- Again, in some operations, a small dish is placed on the table to collect sugar packets and other refuse to prevent them from touching the table.

As with hot beverages, servers should check with guests periodically to see if refills need to be made. If a refill needs to be made, refer back to the restaurant's policy on how to perform this service. Some restaurants bring a completely new glass, some refill on the table, etc. Also ensure that there are enough sweeteners still available for the guest (or refill, if necessary).

2. A good suggestive-selling program involves activities that should make customers feel comfortable. Servers can:
 - Vividly and accurately describe items to customers. Servers need to be able to answer specific questions about the menu items, including ingredients, preparation techniques, and levels of seasoning.
 - Learn which items complement one another.
 - Anticipate guest needs.
 - Suggest add-on items such as drinks, appetizers, and desserts.
 - Identify specific items based on guest preferences; for example, "If you like chocolate, you'll love our new Molten Lava Cake."
 - Suggest the establishment's "best" or "most popular" items, increasing the probability that the customer will be happy.
 - Use props, such as dessert trays, to show the dish.

- **A Selling Script:** The script should discuss how suggestive selling includes talking about daily specials using active and descriptive words to explain menu items, and show enthusiasm for the choices guests make. Students should refer to pages 442–443.
- **Like It Hot!:** Student answers will vary. They will find that melting chocolate is a delicate business, requiring a double boiler, and that air, water, or the wrong temperature can cause problems. With a powdered mix, students may find that it is difficult to dissolve all of the powder, leaving a bit of grit.

- **Planning Ahead:** Student answers will vary; answers will depend on what type of service the restaurant provides. Students may also assume that the busiest time will be between 6 and 8 p.m., the more traditional dinner hours. For a typical sit-down, full-service restaurant, students might assume roughly 5 tables, or 20 guests, can be handled per server. With that in mind, they can figure out the number of busers that would be scheduled. Students can refer to pages 436–437 for a reminder of typical service staff and their responsibilities, and they can conduct online research if necessary.
- **Setting the Table:**
Silverware needed for each situation:
 - Dinner knife, steak knife, dinner fork
 - Dinner knife, salad fork
 - Dinner knife, dinner fork, soup spoon
 - Bouillon spoon
 - Cake fork, coffee spoon
- **The Right POS System For You:** Student answers will vary. They should conduct online research to see what types of POS systems are available for various foodservice operations. The positives and negatives they discuss should reflect the type of operation that might use the POS system (traditional or contemporary service, etc.), and a simple cost-benefit analysis. (Will the organization use all of the features? Will the investment pay off in time and money saved and improved guest service and satisfaction?)
- **Making Sense of Style:** Student answers will vary, but students should consult pages 446–447 about traditional service styles and setups. They should think about current popularity, cost considerations, potential competition, and guest expectations for a mid-to-upscale restaurant.

PAGE 463		EXAM PREP ANSWERS	
1. D (p. 439)		5. D (p. 438)	8. B (p. 455)
2. A (p. 445)		6. A (p. 437)	9. A (p. 438)
3. B (p. 447)		7. B (p. 442)	10. B (p. 453)
4. B (p. 448)			

Chapter 22

Teacher's Companion

CHAPTER OVERVIEW

This chapter introduces the students to some basic concepts in management. The first part of the chapter explains how colleagues can learn to work together more efficiently and respectfully. Then problem solving and successful leadership are discussed.

CHAPTER OBJECTIVES

- 22.1 List the major responsibilities of a manager.
- 22.2 Identify the behaviors of a leader.
- 22.3 Identify common expectations that employees have about managers.
- 22.4 List ways to promote diversity in the workplace.
- 22.5 List the steps for solving a problem, and explain how each step contributes to finding a solution.
- 22.6 Explain what a SMART goal is.
- 22.7 Explain the purpose of vision statements and mission statements, and contrast their differences.

ADVANCE PREPARATION

Review	- Chapter 22, pages 464–479 - Unit case study, "Service and Management," pages 418–419
Contact	- A leader in the local community (does not need to be foodservice related, as the thematic elements are similar in many disciplines) - Principal or Career and Technical Education Director, to speak about management and leadership skills
Prepare	Samples of mission and vision statements

CHAPTER BREAKDOWN

PAGE 466
INTRODUCTION

Discuss

- Good leaders must understand the goals, values, vision, and mission statements of an operation in order to successfully lead the team. Good leaders are made, not born.
- Ask students to discuss the best leaders they have encountered. What made these people so successful? How did they affect their employees, students, or members?

PAGES 466–469
THE RESPONSIBILITIES OF A MANAGER

Customized Instruction

Learning disabled	Make a list of the responsibilities of a manager. Find or create images that help to describe the actions. (This can also be modified to be a pretest activity for the knowledge before and after the content.)
Academically gifted	Research mission and vision statements from companies that you admire (look for other options, outside of those listed in Table 22.1 and Table 22.2). How do you make a vision happen? Write a personal essay about the mission statement, vision, and achievements for the businesses you admire, as well as your own goals and successes.
ELL	Create a graphic organizer to define SMART goals. Find images or video clips that help to define the action involved in making and measuring goals. Design a smart goal for yourself, using the information on pages 468 and 469.

Reinforce and Review

- Managers are responsible for ensuring that the team is working efficiently and effectively during the shift, operational costs are allocated and accounted for, and sales and service targets are developed and met.
- Vision statements articulate what the organization will promote and deliver to customers in order to generate profits. Vision statements are refined into mission statements and goals, which assure that the vision is implemented throughout operational procedures.
- One of the main benefits of a mission statement is that it provides a source of accountability for the organization, communicating daily goals and objectives.
- Organizational goals lay the foundation for specific employee goals, commonly found in performance plans. The most effective goals are SMART: specific, measurable, achievable, relevant, and time bound. SMART goals provide clear, concise expectations for all employees.

Discuss

- What do the sample vision statements on page 467 tell students about the companies who wrote them? How does reading these statements affect student views of these companies?
- How do mission statements, vision statements, and goals work together to explain a company's plans and behaviors?
- Encourage students to compare the mission statements and vision statements on pages 467–468. Which seems more guest-friendly, the mission or vision statements? What do they say about their companies' day-to-day activities?
- How does communication play a role in establishing both organizational and individual goals? What barriers to communication may arise?
- Organizational goals are generally established at the top of a business's hierarchy, but the employees at the bottom of the hierarchy, such as servers and cooks, are typically the ones who must do the hard work to achieve the goals. How can organizational goals be made realistic and workable for all staff?

Vocabulary Review

- **Mission statement:** Written statement of a company that describes what that company wants to do now; its immediate purpose and goals.
- **Vision statement:** Written statement of a company that outlines what a company wants to be in the future; an inspiring vision of where the company would like to go.
- **Goals:** Statements of desired results, linked to a company's mission statement, that are used to measure actual performance within an organization; goals are what people commit to do for an organization.
- **Objective:** A specific description or statement of what a manager wants to achieve.
- **SMART goals:** Acronym describing the characteristics of the most effective goals; SMART stands for specific (goals should be clearly stated and list exactly what is expected), measurable (management needs to be able to determine whether goals have succeeded or failed by some result), achievable (goals should be realistic and able to be met), relevant (goals should be connected to the vision and mission of the business), and time bound (goals need to have a date for accomplishment). SMART goals are usually no longer than a sentence, such as, "Staff will decrease guest complaints by 5 percent over the next three months."

Knowledge Check Answers (Page 469)

1. Manager responsibilities include human resources management, scheduling, food costing, sales building, guest service, training and development, financial management, and culinary management.
2. SMART goals are specific, measurable, achievable, relevant, and time bound.
3. Vision statements describe what an organization wants to become and why it exists. Mission statements, on the other hand, refine the vision statement by stating the purpose of the organization to employees and customers.

Homework Activity: Writing

Personal Vision Statement

Students should write their own personal vision statement that defines their purpose and values to potential employers. Once the vision statement is written, have students refine the vision statement to make it into a mission statement.

PAGES 470–471

EMPLOYEE EXPECTATIONS

Customized Instruction

Learning disabled	Use Table 22.3, Employee Expectations of Managers, to create a poster or graphic organizer. Find or create images to define both the attributes and the evidence of a good manager (what the behavior looks like).
Academically gifted	Design a training program for managing diversity in the workplace, using the information from the Essential Skills feature on page 471. Research other programs online, and create a program geared toward teen employees.
ELL	What are examples of a good manager? A bad manager? Find clips of video or images to show some of the positive and negative attributes of a manager, from an employee's point of view.

Reinforce and Review

- Professionals are excellent performers. They are honest, respectful, and can lead and serve others with integrity and fairness.
- Employees expect managers to exhibit ethical behavior in their relations with employees, other staff, vendors, and guests.
- Employees expect to be given the tools and resources they need to perform successfully.
- Essential Skills: Managing Diversity in the Workplace discusses the ways managers can develop respect and communication in the workplace.

Discuss

- Why is it important for employees to feel free to raise issues and concerns about workplace matters? Is it possible to feel too free? Where do students think boundaries should be drawn?
- Encourage students to give examples of times that they had to give a supervisor or teacher unwelcome information. How did the process make them feel? Were the results as unpleasant as predicted? What steps could have been taken to prevent the situation from arising in the first place?
- How can students and employees know which workplace concerns are significant enough to voice to management and which are not? Is there a foolproof way of deciding this?

Vocabulary Review

- **Cross-cultural interaction:** Meaningful communication among employees from diverse cultures and backgrounds.

In-Class Activity: Physical
Cross-Cultural Interaction Commercial
Have students work in groups of three to four to create a 30-second commercial to promote the benefits of cross-cultural interaction in the workplace. Students need to write the script for the commercial and then practice acting out the script. The commercial can include music or sounds effects. Have each group act out their commercial.

PAGES 472–474

PROBLEM SOLVING AS A MANAGER

Customized Instruction

Learning disabled	Write down a problem you have had in the past, and how you solved it. For example, your shoe was untied, and you tied it. Make a list of steps that were your problem-solving process. Draw images. Compare your steps to the process model, shown as seven steps on pages 472–473.
Academically gifted	What are some other models for solving problems? Perform a SWOT analysis with the model found on pages 472–473, as well on three other models for solving problems.
ELL	Draw or find images, or write a skit or create a video, to make the sample problem and problem-solving model in Table 22.4 come to life.

Reinforce and Review

- Each step of the problem-solving model provides input to the next, until documentation is reached.
- Misdiagnosing a problem prolongs the time until an appropriate resolution can be reached, so a thorough investigation is essential to uncovering the root cause of the problem.
- The process of determining the root cause of a problem can uncover other problems within the establishment that can in turn be resolved.
- When conducting or participating in the investigation of a problem, focus on systems, processes, and actions rather than on people or personalities.
- Video: Problem Solving: This animation shows the steps to effectively solving problems using the steps listed on pages 472–473, and the information in Table 22.4 on page 474.

Discuss

- What happens if the solution to the problem is misidentified, or if the action plan is implemented unsuccessfully? What might the next steps be?
- How can good interpersonal communication and interpersonal skills affect the outcome of an investigation into a problem's root cause? What roles can the barriers to communication discussed in chapter 7 play in this outcome?
- Unfortunately, not all managers are true leaders, and some can initiate or worsen problems even through the best of intentions. When a manager's actions are the root cause of a workplace problem, how should the staff react?
- Sometimes, the action plan needed to resolve a workplace concern can appear unpleasant to employees, especially if it involves changing established work patterns or even terminating colleagues. How can managers motivate employees to follow an action plan that will ultimately benefit both employer and employees when initial perceptions are negative or even hostile?
- How can a manager know when a problem is better left alone? Which workplace concerns should always be investigated? Is it possible that management bias can prevent the investigation of legitimate problems? How does this relate to interpersonal communication?

Vocabulary Review

- **Problem solving:** An intentional process followed in a logical sequence, which leads to a reasonable conclusion.
- **Problem-solving process:** A process management works through so that once a problem is solved, the operation will not have to deal with the problem again. To accomplish this, managers follow a problem-solving model to explore all of a problem's potential causes.
- **Root cause:** The action or situation that initiates the problem.

Homework Activity: Writing

Go with the Flow

Each student should select a problem he or she has experienced. Should they wish, students may also choose hypothetical situations for this exercise through the seven steps of the problem-solving model to determine and document an appropriate resolution.

For each step in the plan, describe the appropriate action to be taken. For instance, step 3 requires students to "determine alternative solutions and consequences." Students should list all the solutions to the problem as well as the possible consequences of implementing each solution. Consult the material on pages 472–474 to learn more about what each of the seven steps requires.

As part of this assignment, students should create a flowchart illustrating their use of the problem-solving model and a one-page paper on their findings.

PAGES 475–476**LEADERSHIP SKILLS****Customized Instruction**

Learning disabled	Create a skit or video to show how leaders demonstrate good behaviors, using the bullet points found on page 475.
Academically gifted	Choose a figure that is a leader you admire. Write an essay, explaining how the leader demonstrates the steps for positive leadership behavior, found on page 475.
ELL	Find clips of video that demonstrate the behaviors for leadership on page 475. Find and describe how the video showed the behavior. How would you lead others? Write a few notes on your thoughts and what you saw in the video clips.

Reinforce and Review

- Leadership is the ability to inspire and motivate employees to behave in accordance with the vision of an organization and to accomplish the organization's goals.
- Leaders must consistently hold themselves and their employees accountable for their actions, treating all fairly.
- True leaders are respected by their employees, which gives them the necessary influence to lead by example.
- Leaders not only seek to create positive changes but also to help others embrace those changes.
- Ultimately, a successful team leader needs to listen, be consistent, and provide direction.
- Video: Leadership Skills: This animation shows how good leaders demonstrate leadership through positive behaviors, from the list on page 475.

Discuss

- Page 475 describes a number of behaviors typically demonstrated by good leaders. Encourage students to discuss the qualities shared by good leaders. Which of these should also be shared by employees?
- What are the characteristics of a good leader?

Knowledge Check Answers (Page 476)

1. The three common employee expectations of managers are professionalism, personal treatment, and work and task support.
2. Diversity is promoted in the workplace by offering diversity and sensitivity training, modeling good behavior, integrating diversity into the mission statement, encouraging studying and using different languages, and providing multilingual materials.
3. Problem solving includes defining the problem, determining the root cause, determining the alternative solutions and consequences, selecting the best solution, developing an action plan, implementing the action plan, and documenting the problem and solution for future reference.

Homework Assignment: Science

What Is Management Science?

Management science, also known as operations research, is the field of using scientific techniques to reach management goals. Management science isn't simply "how to manage"; instead, it turns management problems into mathematical equations or abstract models so that the most efficient, rational decisions can be made.

Research management science, then pick out a situation that you could imagine arising in a restaurant or foodservice establishment, such as managing the flow of perishable supplies or scheduling staff for a catering event. How can management science help you resolve this problem? Can you write an equation to fit the situation?

In-Class Activity: Literacy

Designing the Perfect Boss

What does your ideal supervisor look like? What goals and attributes would he or she have? How might he or she relate to other employees, and in what ways would he or she support your organization or establishment?

Write a job description for the perfect boss, identifying what you believe are the most important qualifications a supervisor should have. Share your description with classmates as part of a group discussion.

In-Class Activity: Literacy

Quotable Notes

Each student should spend 10 minutes devising his or her original quote about leadership.

As a class, discuss the similarities and differences among the quotes. How can each be used in the classroom or in the workplace?

PAGE 477

CASE STUDY FOLLOW-UP ANSWERS: "SERVICE AND MANAGEMENT"

1. Students should identify three ways in which Paul and Paulina can behave more professionally and create stronger relationships.
2. Steve can use the mission statement to clarify to Paul and Paulina how their jobs support one another as well as Offsides' ultimate success. She can also point to the standards the mission statement sets for employee performance and how their interpersonal problems keep them from meeting these standards.

PAGES 477–478

CHAPTER ACTIVITIES ANSWERS

- **Create Cross-Cultural Interaction:** Students should discuss the different roles played by managers and employees in a diverse team.
- **The Science of the Guest:** Student answers will vary. Students can conduct online research into the "science" behind guest spending and what motivates guests to try restaurants, return to restaurants, and spend their money.

- **Salad Goals:** Student answers may vary. Here are some details for one method to the math:

Adding all of the salads made by the line cook for each hour from each day gives you the following rounded figures:

- 10 salads average made at 11 a.m.
- 24 salads average made at 12 p.m.
- 18 salads average made at 1 p.m.

Dividing the total salads made in three hours ($10 + 24 + 18 = 52$) by 3 ($52 \div 3$) gives an average salads made per hour of 17 (rounded).

For the average number of salads ordered in a lunch rush, students should first add the number of salads ordered for each day, to obtain:

- 58 salads ordered Monday
- 78 salads ordered Tuesday
- 96 salads ordered Wednesday
- 57 salads ordered Thursday
- 95 salads ordered Friday
- 19 salads ordered Saturday
- 21 salads ordered Sunday

Dividing the total salads ordered for lunch rush by 7 (for the seven days in the week) gives an average ordered for lunch rush of 61 (rounded).

If you divide that by 3, representing the three hours of the lunch rush, you get an average of 20 (rounded) salads ordered per hour.

The median of salads made (10, 18, 24) is 18 (the middle number).

Students can interpret the data in various ways, and they would be right to point out that each day of the week, and each hour of the lunch rush in each of those days, may have its own unique lunch-rush characteristics and averages. The important thing is that they understand how to take an average and how to find a median, and that they can justify their answers.

- **Make a Statement!:** Students should model the vision statement and mission statement on the material on pages 467–468. Goals should be based on the vision and mission statement they create.
- **The Interview:** Student answers will vary. Students can refer back to chapter 5, pages 78–84, to remind themselves of the skills and details related to professional interviews. The manager trying to sell his or her operation's mission can refer to pages 466–469 for more guidance on mission and vision statements, and organizational goals.
- **Leadership Skills:** Students should prepare a brief oral and written report on how this demonstration of positive or negative leadership skills affected their own attitudes.

PAGE 479**EXAM PREP ANSWERS**

1. C (p. 469)

2. A (p. 467)

3. D (p. 469)

4. D (p. 472)

5. D (p. 471)

6. B (p. 466)

7. B (p. 467)

8. A (p. 475)

9. A (p. 472)

10. D (p. 471)