



MAKING CAREER CHOICES

A career differs from a job in that it is a series of progressively more responsible jobs in one field or a related field. You will need to learn some special skills to choose a career and to help you in your job search. Choosing a career and identifying career opportunities require careful thought and preparation. To aid you in making important career choices, follow these steps:

STEPS TO MAKING A CAREER DECISION

1. Conduct a self-assessment to determine your:
 - values
 - lifestyle goals
 - interests
 - skills and aptitudes
 - personality
 - work environment preferences
 - relationship preferences
2. Identify possible career choices based on your self-assessment.
3. Gather information on each choice, including future trends.
4. Evaluate your choices based on your self-assessment.
5. Make your decision.

After you make your decision, plan how you will reach your goal. It is best to have short-term, medium-term, and long-term goals. In making your choices, explore the future opportunities in this field or fields over the next several years. What impact will new technology and automation have on job opportunities in the next few years? Remember, if you plan, you make your own career opportunities.



PERSONAL CAREER PORTFOLIO

You will want to create and maintain a personal career portfolio. In it you will keep all the documents you create and receive in your job search:

- Contact list
- Résumé
- Letters of recommendation
- Employer evaluations
- Awards
- Evidence of participation in school, community, and volunteer activities
- Notes about your job search
- Notes made after your interviews



CAREER RESEARCH RESOURCES

In order to gather information on various career opportunities, there are a variety of sources to research:

- **Libraries.** Your school or public library offers good career information resources. Here you will find books, magazines, pamphlets, films, videos, and special reference materials on careers.

In particular, the U.S. Department of Labor publishes three reference books that are especially helpful: the *Dictionary of Occupational Titles (DOT)*, which describes about 20,000 jobs and their relationships with data, people, and things; the *Occupational Outlook Handbook (OOH)*, with information on more than 200 occupations; and the *Guide for Occupational Exploration (GOE)*, a reference that organizes the world of work into 12 interest areas that are subdivided into work groups and subgroups.

- **The Internet.** The Internet is becoming a primary source of research on any topic. It is especially helpful in researching careers.
- **Career Consultations.** Career consultation, an informational interview with a professional who works in a career that interests you, provides an opportunity to learn about the day-to-day realities of a career.
- **On-the-Job Experience.** On-the-job experience can be valuable in learning firsthand about a job or career. You can find out if your school has a work-experience program, or look into a company or organization's internship opportunities. Interning gives you direct work experience and often allows you to make valuable contacts for future full-time employment.

THE JOB SEARCH

To aid you in your actual job search, there are various sources to explore. You should contact and research all the sources that might produce a job lead, or information about a job. Keep a contact list as you proceed with your search. Some of these resources include:

- **Networking with family, friends, and acquaintances.** This means contacting people you know personally, including school counselors, former employers, and professional people.
- **Cooperative education and work-experience programs.** Many schools have such programs in which students work part-time on a job related to one of their classes. Many also offer work-experience programs that are not limited to just one career area, such as marketing.
- **Newspaper ads.** Reading the Help Wanted advertisements in your local papers will provide a source of job leads, as well as teach you about the local job market.
- **Employment agencies.** Most cities have two types of employment agencies, public and private. These employment agencies match workers with jobs. Some private agencies may charge a fee, so be sure to know who is expected to pay the fee and what the fee is.
- **Company personnel offices.** Large and medium-sized companies have personnel offices to handle employment matters, including the hiring of new workers. You can check on job openings by contacting the office by telephone or by scheduling a personal visit.
- **Searching the Internet.** Cyberspace offers multiple opportunities for your job search. Web sites, such as Hotjobs.com or Monster.com, provide lists of companies offering employment. There are tens of thousands of career-related Web sites, so the challenge is finding those that have jobs that interest you and that are up-to-date in their listings. Companies that interest you may have a Web site, which will provide valuable information on their benefits and opportunities for employment.

APPLYING FOR A JOB

When you have contacted the sources of job leads and found some jobs that interest you, the next step is to apply for them. You will need to complete application forms, write letters of application, and prepare your own résumé. Before you apply for a job, you will need to have a work permit if you are under the age of 18 in most states. Some state and federal labor laws designate certain jobs as too dangerous for young workers. Laws also limit the number of hours of work allowed during a

day, a week, or the school year. You will also need to have proper documentation, such as a green card if you are not a U.S. citizen.

JOB APPLICATION

You can obtain the job application form directly at the place of business, by requesting it in writing, or over the Internet. It is best if you can fill the form out at home, but some businesses require that you fill it out at the place of work.

Fill out the job application forms neatly and accurately, using standard English, the formal style of speaking and writing you learned in school. You must be truthful and pay attention to detail in filling out the form.

PERSONAL FACT SHEET

To be sure that the answers you write on a job application form are accurate, make a personal fact sheet before filling out the application:

- Your name, home address, and phone number
- Your Social Security number
- The job you are applying for
- The date you can begin work
- The days and hours you can work
- The pay you want
- Whether or not you have been convicted of a crime
- Your education
- Your previous work experience
- Your birth date
- Your driver's license number if you have one
- Your interests and hobbies, and awards you have won
- Your previous work experience, including dates
- Schools you have attended
- Places you have lived
- Accommodations you may need from the employer
- A list of references—people who will tell an employer that you will do a good job, such as relatives, students, former employers, and the like

LETTERS OF RECOMMENDATION

Letters of recommendation are helpful. You can request teachers, counselors, relatives, and other acquaintances who know you well to write these letters. They should be short, to the point, and give a brief overview of your assets. A brief description of any of your important accomplishments or projects should follow. The letter should end with a brief description of your character and work ethic.

LETTER OF APPLICATION

Some employees prefer a letter of application, rather than an application form. This letter is like writing a sales pitch about yourself. You need to tell why you are the best person for the job, what special qualifications you have, and include all the information usually found on an application form. Write the letter in standard English, making certain that it is neat, accurate, and correct.

RÉSUMÉ

The purpose of a résumé is to make an employer want to interview you. A résumé tells prospective employers what you are like and what you can do for them. A good résumé summarizes you at your best in a one- or two-page outline. It should include the following information:

1. **Identification.** Include your name, address, telephone number, and e-mail address.
2. **Objective.** Indicate the type of job you are looking for.
3. **Experience.** List experience related to the specific job for which you are applying. List other work if you have not worked in a related field.
4. **Education.** Include schools attended from high school on, the dates of attendance, and diplomas or degrees earned. You may also include courses related to the job you are applying for.
5. **References.** Include up to three references or indicate that they are available. Always ask people ahead of time if they are willing to be listed as references for you.

A résumé that you put online or send by e-mail is called an *electronic résumé*. Some Web sites allow you to post them on their sites without charge. Employers access these sites to find new employees. Your electronic résumé should follow the guidelines for a regular one. It needs to be accurate. Stress your skills and sell yourself to prospective employers.

COVER LETTER

If you are going to get the job you want, you need to write a great cover letter to accompany your résumé. Think of a cover letter as an introduction: a piece of paper that conveys a smile, a confident hello, and a nice, firm handshake. The cover letter is the first thing a potential employer sees, and it can make a powerful impression. The following are some tips for creating a cover letter that is professional and gets the attention you want:

- **Keep it short.** Your cover letter should be one page, no more.
- **Make it look professional.** These days, you need to type your letter on a computer and print it on a laser printer. Do not use an inkjet printer unless it produces extremely crisp type. Use white or buff-colored paper; anything else will draw the wrong kind of attention. Type your name, address, phone number, and e-mail address at the top of the page.
- **Explain why you are writing.** Start your letter with one sentence describing where you heard of the opening. “Joan Wright suggested I contact you regarding a position in your marketing department,” or “I am writing to apply for the position you advertised in the Sun City Journal.”
- **Introduce yourself.** Give a short description of your professional abilities and background. Refer to your attached résumé: “As you will see in the attached résumé, I am an experienced editor with a background in newspapers, magazines, and textbooks.” Then highlight one or two specific accomplishments.
- **Sell yourself.** Your cover letter should leave the reader thinking, “This person is exactly what we are looking for.” Focus on what you can do for the company. Relate your skills to the skills and responsibilities mentioned in the job listing. If the ad mentions solving problems, relate a problem you solved at school or work. If the ad mentions specific skills or knowledge required, mention your mastery of these in your letter. (Also be sure these skills are included on your résumé.)
- **Provide all requested information.** If the Help Wanted ad asked for “salary requirements” or “salary history,” include this information in your cover letter. However, you do not have to give specific numbers. It is okay to say, “My wage is in the range of \$10 to \$15 per hour.” If the employer does not ask for salary information, do not offer any.

- **Ask for an interview.** You have sold yourself, now wrap it up. Be confident, but not pushy. “If you agree that I would be an asset to your company, please call me at [insert your phone number]. I am available for an interview at your convenience.” Finally, thank the person. “Thank you for your consideration. I look forward to hearing from you soon.” Always close with a “Sincerely,” followed by your full name and signature.
- **Check for errors.** Read and re-read your letter to make sure each sentence is correctly worded and there are no errors in spelling, punctuation, or grammar. Do not rely on your computer’s spell checker or grammar checker. A spell check will not detect if you typed “tot he” instead of “to the.” It is a good idea to have someone else read your letter, too. He or she might notice an error you overlooked.



INTERVIEW

Understanding how to best prepare for and follow up on interviews is critical to your career success. At different times in your life, you may interview with a teacher or professor, a prospective employer, a supervisor, or a promotion or tenure committee. Just as having an excellent résumé is vital for opening the door, interview skills are critical for putting your best foot forward and seizing the opportunity to clearly articulate why you are the best person for the job.

RESEARCH THE COMPANY

Your ability to convince an employer that you understand and are interested in the field you are interviewing to enter is important. Show that you have knowledge about the company and the industry. What products or services does the company offer? How is it doing? What is the competition? Use your research to demonstrate your understanding of the company.

PREPARE QUESTIONS FOR THE INTERVIEWER

Prepare interview questions to ask the interviewer. Some examples include:

- “What would my responsibilities be?”
- “Could you describe my work environment?”
- “What are the chances to move up in the company?”
- “Do you offer training?”
- “What can you tell me about the people who work here?”

DRESS APPROPRIATELY

You will never get a second chance to make a good first impression. Nonverbal communication is 90 percent of communication, so dressing appropriately is of the utmost importance. Every job is different, and you should wear clothing that is appropriate for the job for which you are applying. In most situations, you will be safe if you wear clean, pressed, conservative business clothes in neutral colors. Pay special attention to grooming. Keep makeup light and wear very little jewelry. Make certain your nails and hair are clean, trimmed, and neat. Do not carry a large purse, backpack, books, or coat. Simply carry a pad of paper, a pen, and extra copies of your résumé and letters of reference in a small folder.

EXHIBIT GOOD BEHAVIOR

Conduct yourself properly during an interview. Go alone; be courteous and polite to everyone you meet. Relax and focus on your purpose: to make the best possible impression.

- Be on time.
- Be poised and relaxed.
- Avoid nervous habits.
- Avoid littering your speech with verbal clutter such as “you know,” “um,” and “like.”
- Look your interviewer in the eye and speak with confidence.
- Use nonverbal techniques to reinforce your confidence, such as a firm handshake and poised demeanor.
- Convey maturity by exhibiting the ability to tolerate differences of opinion.
- Never call anyone by a first name unless you are asked to do so.
- Know the name, title, and the pronunciation of the interviewer’s name.
- Do not sit down until the interviewer does.
- Do not talk too much about your personal life.
- Never bad-mouth your former employers.

BE PREPARED FOR COMMON INTERVIEW QUESTIONS

You can never be sure exactly what will happen at an interview, but you can be prepared for common interview questions. There are some interview questions that are illegal. Interviewers should not ask you about your age, gender, color, race, or religion. Employers should not ask whether you are married or pregnant, or question your health or disabilities.

Take time to think about your answers now. You might even write them down to clarify your thinking. The key to all interview questions is to be honest, and to be positive. Focus your answers on skills and abilities that apply to the job you are seeking. Practice answering the following questions with a friend:

- “Tell me about yourself.”
- “Why do you want to work at this company?”
- “What did you like/dislike about your last job?”
- “What is your biggest accomplishment?”
- “What is your greatest strength?”
- “What is your greatest weakness?”
- “Do you prefer to work with others or on your own?”
- “What are your career goals?” or “Where do you see yourself in five years?”
- “Tell me about a time that you had a lot of work to do in a short time. How did you manage the situation?”
- “Have you ever had to work closely with a person you didn’t get along with? How did you handle the situation?”

AFTER THE INTERVIEW

Be sure to thank the interviewer after the interview for his or her time and effort. Do not forget to follow up after the interview. Ask, “What is the next step?” If you are told to call in a few days, wait two or three days before calling back.

If the interview went well, the employer may call you to offer you the job. Find out the terms of the job offer, including job title and pay. Decide whether you want the job. If you decide not to accept the job, write a letter of rejection. Be courteous and thank the person for the opportunity and the offer. You may wish to give a brief general reason for not accepting the job. Leave the door open for possible employment in the future.

FOLLOW UP WITH A LETTER

Write a thank-you letter as soon as the interview is over. This shows your good manners, interest, and enthusiasm for the job. It also shows that you are organized. Make the letter neat and courteous. Thank the interviewer. Sell yourself again.

ACCEPTING A NEW JOB

If you decide to take the job, write a letter of acceptance. The letter should include some words of appreciation for the opportunity, written acceptance of the job offer, the terms of employment (salary, hours, benefits), and the starting date. Make sure the letter is neat and correct.



STARTING A NEW JOB

Your first day of work will be busy. Determine what the dress code is and dress appropriately. Learn to do each task assigned properly. Ask for help when you need it. Learn the rules and regulations of the workplace.

You will do some paperwork on your first day. Bring your personal fact sheet with you. You will need to fill out some forms. Form W-4 tells your employer how much money to withhold for taxes. You may also need to fill out Form I-9. This shows that you are allowed to work in the United States. You will need your Social Security number and proof that you are allowed to work in the United States. You can bring your U.S. passport, your Certificate of Naturalization, or your Certificate of U.S. Citizenship. If you are not a permanent resident of the United States, bring your green card. If you are a resident of the United States, you will need to bring your work permit on your first day. If you are under the age of 16 in some states, you need a different kind of work permit.

You might be requested to take a drug test as a requirement for employment in some states. This could be for the safety of you and your coworkers, especially when working with machinery or other equipment.

IMPORTANT SKILLS AND QUALITIES

You will not work alone on a job. You will need to learn skills for getting along and being a team player. There are many good qualities necessary to get along in the workplace. They include being positive, showing sympathy, taking an interest in others, tolerating differences, laughing a little, and showing respect. Your employer may promote you or give you a raise if you show good employability skills. You must also communicate with your employer. For example, if you will be sick or late to work, you should call your employer as soon as possible.

There are several qualities necessary to be a good employee and get ahead in your job:

- be cooperative
- possess good character
- be responsible
- finish what you start

- have a strong work ethic
- work well without supervision
- work well with others
- possess initiative
- show enthusiasm for what you do
- be on time
- make the best of your time
- obey company laws and rules
- be honest
- be loyal
- exhibit good health habits

LEAVING A JOB

If you are considering leaving your job or are being laid off, you are facing one of the most difficult aspects in your career. The first step in resigning is to prepare a short resignation letter to offer your supervisor at the conclusion of the meeting you set up with him or her. Keep the letter short and to the point. Express your appreciation for the opportunity you had with the company. Do not try to list all that was wrong with the job.

You want to leave on good terms. Do not forget to ask for a reference. Do not talk about your employer or any of your coworkers. Do not talk negatively about your employer when you apply for a new job.

If you are being laid off or face downsizing, it can make you feel angry or depressed. Try to view it as a career-change opportunity. If possible, negotiate a good severance package. Find out about any benefits you may be entitled to. Perhaps the company will offer job-search services or consultation for finding new employment.



TAKE ACTION!

It is time for action. Remember the networking and contact lists you created when you searched for this job. Reach out for support from friends, family, and other acquaintances. Consider joining a job-search club. Assess your skills. Upgrade them if necessary. Examine your attitude and your vocational choices. Decide the direction you wish to take and move on!

Number and Operations

► **Understand numbers, ways of representing numbers, relationships among numbers, and number systems**

Fraction, Decimal, and Percent

A percent is a ratio that compares a number to 100. To write a percent as a fraction, drop the percent sign, and use the number as the numerator in a fraction with a denominator of 100. Simplify, if possible. For example, $76\% = \frac{76}{100}$, or $\frac{19}{25}$. To write a fraction as a percent, convert it to an equivalent fraction with a denominator of 100. For example, $\frac{3}{4} = \frac{75}{100}$, or 75%. A fraction can be expressed as a percent by first converting the fraction to a decimal (divide the numerator by the denominator) and then converting the decimal to a percent by moving the decimal point two places to the right.

Comparing Numbers on a Number Line

In order to compare and understand the relationship between real numbers in various forms, it is helpful to use a number line. The zero point on a number line is called the origin; the points to the left of the origin are negative, and those to the right are positive. The number line below shows how numbers in fraction, decimal, percent, and integer form can be compared.



Percents Greater Than 100 and Less Than 1

Percents greater than 100% represent values greater than 1. For example, if the weight of an object is 250% of another, it is 2.5, or $2\frac{1}{2}$, times the weight.

Percents less than 1 represent values less than $\frac{1}{100}$. In other words, 0.1% is one tenth of one percent, which can also be represented in decimal form as 0.001, or in fraction form as $\frac{1}{1,000}$. Similarly, 0.01% is one hundredth of one percent or 0.0001 or $\frac{1}{10,000}$.

Ratio, Rate, and Proportion

A ratio is a comparison of two numbers using division. If a basketball player makes 8 out of 10 free throws, the ratio is written as 8 to 10, 8:10, or $\frac{8}{10}$. Ratios are usually written in simplest form. In simplest form, the ratio “8 out of 10” is 4 to 5, 4:5, or $\frac{4}{5}$. A rate is a ratio of two measurements having different kinds of units—cups per gallon, or miles per hour, for example. When a rate is simplified so that it has a denominator of 1, it is called a unit rate. An example of a unit rate is 9 miles per hour. A proportion is an equation stating that two ratios are equal. $\frac{3}{18} = \frac{13}{78}$ is an example of a proportion. The cross products of a proportion are also equal. $\frac{3}{18} = \frac{13}{78}$ and $3 \times 78 = 18 \times 13$.

Representing Large and Small Numbers

In order to represent large and small numbers, it is important to understand the number system. Our number system is based on 10, and the value of each place is 10 times the value of the place to its right.

The value of a digit is the product of a digit and its place value. For instance, in the number 6,400, the 6 has a value of six thousands and the 4 has a value of four hundreds. A place value chart can help you read numbers. In the chart, each group of three digits is called a period. Commas separate the periods: the ones period, the thousands period, the millions period, and so on. Values to the right of the ones period are decimals. By understanding place value you can write very large numbers like 5 billion and more, and very small numbers that are less than 1, like one-tenth.

Scientific Notation

When dealing with very large numbers like 1,500,000, or very small numbers like 0.000015, it is helpful to keep track of their value by writing the numbers in scientific notation. Powers of 10 with positive exponents are used with a decimal between 1 and 10 to express large numbers. The exponent represents the number of places the decimal point is moved to the right. So, 528,000 is written in scientific notation as 5.28×10^5 . Powers of 10 with negative exponents are used with a decimal between 1 and 10 to express small numbers. The exponent represents the number of places the decimal point is moved to the left. The number 0.00047 is expressed as 4.7×10^{-4} .

Factor, Multiple, and Prime Factorization

Two or more numbers that are multiplied to form a product are called factors. Divisibility rules can be used to determine whether 2, 3, 4, 5, 6, 8, 9, or 10 are factors of a given number. Multiples are the products of a given number and various integers.

For example, 8 is a multiple of 4 because $4 \times 2 = 8$. A prime number is a whole number that has exactly two factors: 1 and itself. A composite number is a whole number that has more than two factors. Zero and 1 are neither prime nor composite. A composite number can be expressed as the product of its prime factors. The prime factorization of 40 is $2 \times 2 \times 2 \times 5$, or $2^3 \times 5$. The numbers 2 and 5 are prime numbers.

Integers

A negative number is a number less than zero. Negative numbers like -8 , positive numbers like $+6$, and zero are members of the set of integers. Integers can be represented as points on a number line. A set of integers can be written $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$ where \dots means “continues indefinitely.”

Real, Rational, and Irrational Numbers

The real number system is made up of the sets of rational and irrational numbers. Rational numbers are numbers that can be written in the form a/b where a and b are integers and $b \neq 0$. Examples are 0.45, $\frac{1}{2}$, and $\sqrt{36}$. Irrational numbers are non-repeating, non-terminating decimals. Examples are $\sqrt{71}$, π , and 0.020020002...

Complex and Imaginary Numbers

A complex number is a mathematical expression with a real number element and an imaginary number element. Imaginary numbers are multiples of i , the “imaginary” square root of -1 . Complex numbers are represented by $a + bi$, where a and b are real numbers and i represents the imaginary element. When a quadratic equation does not

have a real number solution, the solution can be represented by a complex number. Like real numbers, complex numbers can be added, subtracted, multiplied, and divided.

Vectors and Matrices

A matrix is a set of numbers or elements arranged in rows and columns to form a rectangle. The number of rows is represented by m and the number of columns is represented by n . To describe the number of rows and columns in a matrix, list the number of rows first using the format $m \times n$. Matrix A below is a 3×3 matrix because it has 3 rows and 3 columns. To name an element of a matrix, the letter i is used to denote the row and j is used to denote the column, and the element is labeled in the form $a_{i,j}$. In matrix A below, $a_{3,2}$ is 4.

$$\text{Matrix A} = \begin{pmatrix} 1 & 3 & 5 \\ 0 & 6 & 8 \\ 3 & 4 & 5 \end{pmatrix}$$

A vector is a matrix with only one column or row of elements. A transposed column vector, or a column vector turned on its side, is a row vector. In the example below, row vector b' is the transpose of column vector b .

$$b = \begin{pmatrix} 1 \\ 2 \\ 3 \\ 4 \end{pmatrix}$$

$$b' = (1 \ 2 \ 3 \ 4)$$

► Understand meanings of operations and how they relate to one another

Properties of Addition and Multiplication

Properties are statements that are true for any numbers. For example, $3 + 8$ is the same as $8 + 3$ because each expression equals 11. This illustrates the Commutative Property of Addition. Likewise, $3 \times 8 = 8 \times 3$ illustrates the Commutative Property of Multiplication.

When evaluating expressions, it is often helpful to group or associate the numbers. The Associative Property says that the way in which numbers are grouped when added or multiplied does not change the sum or product. The following properties are also true:

- **Additive Identity Property:** When 0 is added to any number, the sum is the number.
- **Multiplicative Identity Property:** When any number is multiplied by 1, the product is the number.
- **Multiplicative Property of Zero:** When any number is multiplied by 0, the product is 0.

Rational Numbers

A number that can be written as a fraction is called a rational number. Terminating and repeating decimals are rational numbers because both can be written as fractions.

Decimals that are neither terminating nor repeating are called irrational numbers because they cannot be written as fractions. Terminating decimals can be converted to fractions by placing the number (without the decimal point) in the numerator. Count the number of places to the right of the decimal point, and in the denominator, place a 1 followed by a number of zeros equal to the number of places that you counted. The fraction can then be reduced to its simplest form.

Writing a Fraction as a Decimal

Any fraction $\frac{a}{b}$, where $b \neq 0$, can be written as a decimal by dividing the numerator by the denominator. So, $\frac{a}{b} = a \div b$. If the division ends, or terminates, when the remainder is zero, the decimal is a terminating decimal. Not all fractions can be written as terminating decimals. Some have a repeating decimal. A bar indicates that the decimal repeats forever. For example, the fraction $\frac{4}{9}$ can be converted to a repeating decimal, $0.\overline{4}$.

Adding and Subtracting Like Fractions

Fractions with the same denominator are called like fractions. To add like fractions, add the numerators and write the sum over the denominator. To add mixed numbers with like fractions, add the whole numbers and fractions separately, adding the numerators of the fractions, then simplifying if necessary. The rule for subtracting fractions with like denominators is similar to the rule

for adding. The numerators can be subtracted and the difference written over the denominator. Mixed numbers are written as improper fractions before subtracting. These same rules apply to adding or subtracting like algebraic fractions. An algebraic fraction is a fraction that contains one or more variables in the numerator or denominator.

Adding and Subtracting Unlike Fractions

Fractions with different denominators are called unlike fractions. The least common multiple of the denominators is used to rename the fractions with a common denominator. After a common denominator is found, the numerators can then be added or subtracted. To add mixed numbers with unlike fractions, rename the mixed numbers as improper fractions. Then find a common denominator, add the numerators, and simplify the answer.

Multiplying Rational Numbers

To multiply fractions, multiply the numerators and multiply the denominators. If the numerators and denominators have common factors, they can be simplified before multiplication. If the fractions have different signs, then the product will be negative. Mixed numbers can be multiplied in the same manner, after first renaming them as improper fractions. Algebraic fractions may be multiplied using the same method described above.

Dividing Rational Numbers

To divide a number by a rational number (a fraction, for example), multiply the first number by the multiplicative inverse of the second. Two numbers whose product is 1 are called multiplicative inverses, or reciprocals. $\frac{7}{4} \times \frac{4}{7} = 1$. When dividing by a mixed number, first rename it as an improper fraction, and then multiply by its multiplicative inverse. This process of multiplying by a number's reciprocal can also be used when dividing algebraic fractions.

Adding Integers

To add integers with the same sign, add their absolute values. The sum takes the same sign as the addends. An addend is a number that is added to another number (the augend). The equation $-5 + (-2) = -7$ is an example of adding two integers with the same sign. To add integers with different signs, subtract their absolute values. The sum takes the same sign as the addend with the greater absolute value.

Subtracting Integers

The rules for adding integers are extended to the subtraction of integers. To subtract an integer, add its additive inverse. For example, to find the difference $2 - 5$, add the additive inverse of 5 to 2: $2 + (-5) = -3$. The rule for subtracting integers can be used to solve real-world problems and to evaluate algebraic expressions.

Additive Inverse Property

Two numbers with the same absolute value but different signs are called opposites. For example, -4 and 4 are

opposites. An integer and its opposite are also called additive inverses. The Additive Inverse Property says that the sum of any number and its additive inverse is zero. The Commutative, Associative, and Identity Properties also apply to integers. These properties help when adding more than two integers.

Absolute Value

In mathematics, when two integers on a number line are on opposite sides of zero, and they are the same distance from zero, they have the same absolute value. The symbol for absolute value is two vertical bars on either side of the number. For example, $|-5| = 5$.

Multiplying Integers

Since multiplication is repeated addition, $3(-7)$ means that -7 is used as an addend 3 times. By the Commutative Property of Multiplication, $3(-7) = -7(3)$. The product of two integers with different signs is always negative. The product of two integers with the same sign is always positive.

Dividing Integers

The quotient of two integers can be found by dividing the numbers using their absolute values. The quotient of two integers with the same sign is positive, and the quotient of two integers with a different sign is negative.

$-12 \div (-4) = 3$ and $12 \div (-4) = -3$.

The division of integers is used in statistics to find the average, or mean, of a set of data. When finding the mean of a set of numbers, find the sum of the numbers, and then divide by the number in the set.

Adding and Multiplying Vectors and Matrices

In order to add two matrices together, they must have the same number of rows and columns. In matrix addition, the corresponding elements are added to each other. In other words $(a + b)_{ij} = a_{ij} + b_{ij}$. For example,

$$\begin{pmatrix} 1 & 2 \\ 2 & 1 \end{pmatrix} + \begin{pmatrix} 3 & 6 \\ 0 & 1 \end{pmatrix} = \begin{pmatrix} 1+3 & 2+6 \\ 2+0 & 1+1 \end{pmatrix} = \begin{pmatrix} 4 & 8 \\ 2 & 2 \end{pmatrix}$$

Matrix multiplication requires that the number of elements in each row in the first matrix is equal to the number of elements in each column in the second. The elements of the first row of the first matrix are multiplied by the corresponding elements of the first column of the second matrix and then added together to get the first element of the product matrix. To get the second element, the elements in the first row of the first matrix are multiplied by the corresponding elements in the second column of the second matrix then added, and so on, until every row of the first matrix is multiplied by every column of the second. See the example below.

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \times \begin{pmatrix} 3 & 6 \\ 0 & 1 \end{pmatrix} = \begin{pmatrix} (1 \times 3) + (2 \times 0) & (1 \times 6) + (2 \times 1) \\ (3 \times 3) + (4 \times 0) & (3 \times 6) + (4 \times 1) \end{pmatrix} = \begin{pmatrix} 3 & 8 \\ 9 & 22 \end{pmatrix}$$

Vector addition and multiplication are performed in the same way, but there is only one column and one row.

Permutations and Combinations

Permutations and combinations are used to determine the number of possible outcomes in different situations. An arrangement, listing, or pattern in which order is important is called a permutation. The symbol $P(6, 3)$ represents the number of permutations of 6 things taken 3 at a

time. For $P(6, 3)$, there are $6 \times 5 \times 4$ or 120 possible outcomes. An arrangement or listing where order is not important is called a combination. The symbol $C(10, 5)$ represents the number of combinations of 10 things taken 5 at a time. For $C(10, 5)$, there are $(10 \times 9 \times 8 \times 7 \times 6) \div (5 \times 4 \times 3 \times 2 \times 1)$ or 252 possible outcomes.

Powers and Exponents

An expression such as $3 \times 3 \times 3 \times 3$ can be written as a power. A power has two parts, a base and an exponent. $3 \times 3 \times 3 \times 3 = 3^4$. The base is the number that is multiplied (3). The exponent tells how many times the base is used as a factor (4 times). Numbers and variables can be written using exponents. For example, $8 \times 8 \times 8 \times m \times m \times m \times m \times m$ can be expressed $8^3 m^5$. Exponents also can be used with place value to express numbers in expanded form. Using this method, 1,462 can be written as $(1 \times 10^3) + (4 \times 10^2) + (6 \times 10^1) + (2 \times 10^0)$.

Squares and Square Roots

The square root of a number is one of two equal factors of a number. Every positive number has both a positive and a negative square root. For example, since $8 \times 8 = 64$, 8 is a square root of 64. Since $(-8) \times (-8) = 64$, -8 is also a square root of 64. The notation $\sqrt{\quad}$ indicates the positive square root, $-\sqrt{\quad}$ indicates the negative square root, and $\pm\sqrt{\quad}$ indicates both square roots. For example, $\sqrt{81} = 9$, $-\sqrt{49} = -7$, and $\pm\sqrt{4} = \pm 2$. The square root of a negative number is an imaginary number because any two factors of a negative number must have different signs, and are therefore not equivalent.

Logarithm

A logarithm is the inverse of exponentiation. The logarithm of a number x in base b is equal to the number n .

Therefore, $b^n = x$ and $\log_b x = n$. For example, $\log_4(64) = 3$ because $4^3 = 64$. The most commonly used bases for logarithms are 10, the common logarithm; 2, the binary logarithm; and the constant e , the natural logarithm (also called $\ln(x)$ instead of $\log_e(x)$). Below is a list of some of the rules of logarithms that are important to understand if you are going to use them.

$$\log_b(xy) = \log_b(x) + \log_b(y)$$

$$\log_b(x/y) = \log_b(x) - \log_b(y)$$

$$\log_b(1/x) = -\log_b(x)$$

$$\log_b(x)y = y\log_b(x)$$

► Compute fluently and make reasonable estimates

Estimation by Rounding

When rounding numbers, look at the digit to the right of the place to which you are rounding. If the digit is 5 or greater, round up. If it is less than 5, round down. For example, to round 65,137 to the nearest hundred, look at the number in the tens place. Since 3 is less than 5, round down to 65,100. To round the same number to the nearest ten thousandth, look at the number in the thousandths place. Since it is 5, round up to 70,000.

Finding Equivalent Ratios

Equivalent ratios have the same meaning. Just like finding equivalent fractions, to find an equivalent ratio, multiply or divide both sides by the same number.

For example, you can multiply 7 by both

sides of the ratio 6:8 to get 42:56. Instead, you can also divide both sides of the same ratio by 2 to get 3:4. Find the simplest form of a ratio by dividing to find equivalent ratios until you can't go any further without going into decimals. So, 160:240 in simplest form is 2:3. To write a ratio in the form $1:n$, divide both sides by the left-hand number. In other words, to change 8:20 to $1:n$, divide both sides by 8 to get 1:2.5.

Front-End Estimation

Front-end estimation can be used to quickly estimate sums and differences before adding or subtracting. To use this technique, add or subtract just the digits of the two highest place values, and replace the other place values with zero. This will give you an estimation of the solution of a problem. For example, $93,471 - 22,825$ can be changed to $93,000 - 22,000$ or 71,000. This estimate can be compared to your final answer to judge its correctness.

Judging Reasonableness

When solving an equation, it is important to check your work by considering how reasonable your answer is. For example, consider the equation $9\frac{3}{4} \times 4\frac{1}{3}$. Since $9\frac{3}{4}$ is between 9 and 10 and $4\frac{1}{3}$ is between 4 and 5, only values that are between 9×4 or 36 and 10×5 or 50 will be reasonable. You can also use front-end estimation, or you can round and estimate a reasonable answer. In the equation 73×25 , you can round and solve to estimate a reasonable answer to be near 70×30 or 2,100.

Algebra

► Understand patterns, relations, and functions

Relation

A relation is a generalization comparing sets of ordered pairs for an equation or inequality such as $x = y + 1$ or $x > y$. The first element in each pair, the x values, forms the domain. The second element in each pair, the y values, forms the range.

Function

A function is a special relation in which each member of the domain is paired with exactly one member in the range. Functions may be represented using ordered pairs, tables, or graphs. One way to determine whether a relation is a function is to use the vertical line test. Using an object to represent a vertical line, move the object from left to right across the graph. If, for each value of x in the domain, the object passes through no more than one point on the graph, then the graph represents a function.

Linear and Nonlinear Functions

Linear functions have graphs that are straight lines. These graphs represent constant rates of change. In other words, the slope between any two pairs of points on the graph is the same. Nonlinear functions do not have constant rates of change. The slope changes along these graphs. Therefore, the graphs of nonlinear functions are *not* straight lines. Graphs of curves represent nonlinear functions. The equation for a linear function can be written in the form $y = mx + b$, where m

represents the constant rate of change, or the slope. Therefore, you can determine whether a function is linear by looking at the equation. For example, the equation $y = \frac{3}{x}$ is nonlinear because x is in the denominator and the equation cannot be written in the form $y = mx + b$. A nonlinear function does not increase or decrease at a constant rate. You can check this by using a table and finding the increase or decrease in y for each regular increase in x . For example, if for each increase in x by 2, y does not increase or decrease the same amount each time, the function is nonlinear.

Linear Equations in Two Variables

In a linear equation with two variables, such as $y = x - 3$, the variables appear in separate terms and neither variable contains an exponent other than 1. The graphs of all linear equations are straight lines. All points on a line are solutions of the equation that is graphed.

Quadratic and Cubic Functions

A quadratic function is a polynomial equation of the second degree, generally expressed as $ax^2 + bx + c = 0$, where a , b , and c are real numbers and a is not equal to zero. Similarly, a cubic function is a polynomial equation of the third degree, usually expressed as $ax^3 + bx^2 + cx + d = 0$. Quadratic functions can be graphed using an equation or a table of values. For example, to graph $y = 3x^2 + 1$, substitute the values -1 , -0.5 , 0 , 0.5 , and 1 for x to yield the point coordinates $(-1, 4)$, $(-0.5, 1.75)$, $(0, 1)$, $(0.5, 1.75)$, and $(1, 4)$.

Plot these points on a coordinate grid and connect the points in the form of a parabola. Cubic functions also can be graphed by making a table of values. The points of a cubic function from a curve. There is one point at which the curve changes from opening upward to opening downward, or vice versa, called the point of inflection.

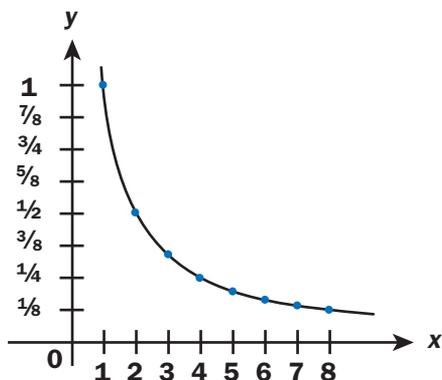
Slope

Slope is the ratio of the rise, or vertical change, to the run, or horizontal change of a line: slope = rise/run. Slope (m) is the same for any two points on a straight line and can be found by using the coordinates of any two points on the line:

$$m = \frac{y_2 - y_1}{x_2 - x_1}, \text{ where } x_2 \neq x_1$$

Asymptotes

An asymptote is a straight line that a curve approaches but never actually meets or crosses. Theoretically, the asymptote meets the curve at infinity. For example, in the function $f(x) = \frac{1}{x}$, two asymptotes are being approached: the line $y = 0$ and $x = 0$. See the graph of the function below.



► Represent and analyze mathematical situations and structures using algebraic symbols

Variables and Expressions

Algebra is a language of symbols. A variable is a placeholder for a changing value. Any letter, such as x , can be used as a variable. Expressions such as $x + 2$ and $4x$ are algebraic expressions because they represent sums and/or products of variables and numbers. Usually, mathematicians avoid the use of i and e for variables because they have other mathematical meanings ($i = \sqrt{-1}$ and e is used with natural logarithms). To evaluate an algebraic expression, replace the variable or variables with known values, and then solve using order of operations. Translate verbal phrases into algebraic expressions by first defining a variable: Choose a variable and a quantity for the variable to represent. In this way, algebraic expressions can be used to represent real-world situations.

Constant and Coefficient

A constant is a fixed value unlike a variable, which can change. Constants are usually represented by numbers, but they can also be represented by symbols. For example, π is a symbolic representation of the value 3.1415.... A coefficient is a constant by which a variable or other object is multiplied. For example, in the expression $7x^2 + 5x + 9$, the coefficient of x^2 is 7 and the coefficient of x is 5. The number 9 is a constant and not a coefficient.

Monomial and Polynomial

A monomial is a number, a variable, or a product of numbers and/or variables such as 3×4 . An algebraic expression that

contains one or more monomials is called a polynomial. In a polynomial, there are no terms with variables in the denominator and no terms with variables under a radical sign. Polynomials can be classified by the number of terms contained in the expression. Therefore, a polynomial with two terms is called a binomial ($z^2 - 1$), and a polynomial with three terms is called a trinomial ($2y^3 + 4y^2 - y$). Polynomials also can be classified by their degrees. The degree of a monomial is the sum of the exponents of its variables. The degree of a nonzero constant such as 6 or 10 is 0. The constant 0 has no degree. For example, the monomial $4b^5c^2$ had a degree of 7. The degree of a polynomial is the same as that of the term with the greatest degree. For example, the polynomial $3x^4 - 2y^3 + 4y^2 - y$ has a degree of 4.

Equation

An equation is a mathematical sentence that states that two expressions are equal. The two expressions in an equation are always separated by an equal sign. When solving for a variable in an equation, you must perform the same operations on both sides of the equation in order for the mathematical sentence to remain true.

Solving Equations with Variables

To solve equations with variables on both sides, use the Addition or Subtraction Property of Equality to write an equivalent equation with the variables on the same side. For example, to solve $5x - 8 = 3x$, subtract $3x$ from each side to get $2x - 8 = 0$. Then add 8 to each side to get $2x = 8$. Finally, divide each side by 2 to find that $x = 4$.

Solving Equations with Grouping Symbols

Equations often contain grouping symbols such as parentheses or brackets. The first step in solving these equations is to use the Distributive Property to remove the grouping symbols. For example $5(x + 2) = 25$ can be changed to $5x + 10 = 25$, and then solved to find that $x = 3$.

Some equations have no solution. That is, there is no value of the variable that results in a true sentence. For such an equation, the solution set is called the null or empty set, and is represented by the symbol \emptyset or $\{\}$. Other equations may have every number as the solution. An equation that is true for every value of the variable is called the identity.

Inequality

A mathematical sentence that contains the symbols $<$ (less than), $>$ (greater than), \leq (less than or equal to), or \geq (greater than or equal to) is called an inequality. For example, the statement that it is legal to drive 55 miles per hour or slower on a stretch of the highway can be shown by the sentence $s \leq 55$. Inequalities with variables are called open sentences. When a variable is replaced with a number, the inequality may be true or false.

Solving Inequalities

Solving an inequality means finding values for the variable that make the inequality true. Just as with equations, when you add or subtract the same number from each side of an inequality, the inequality remains true. For example, if you add 5 to each side of the inequality $3x < 6$, the resulting inequality $3x + 5 < 11$ is also true. Adding or subtracting the same

number from each side of an inequality does not affect the inequality sign. When multiplying or dividing each side of an inequality by the same positive number, the inequality remains true. In such cases, the inequality symbol does not change. When multiplying or dividing each side of an inequality by a negative number, the inequality symbol must be reversed. For example, when dividing each side of the inequality $-4x \geq -8$ by -2 , the inequality sign must be changed to \leq for the resulting inequality, $2x \leq 4$, to be true. Since the solutions to an inequality include all rational numbers satisfying it, inequalities have an infinite number of solutions.

Representing Inequalities on a Number Line

The solutions of inequalities can be graphed on a number line. For example, if the solution of an inequality is $x < 5$, start an arrow at 5 on the number line, and continue the arrow to the left to show all values less than 5 as the solution. Put an open circle at 5 to show that the point 5 is *not* included in the graph. Use a closed circle when graphing solutions that are greater than or equal to, or less than or equal to, a number.

Order of Operations

Solving a problem may involve using more than one operation. The answer can depend on the order in which you do the operations. To make sure that there is just one answer to a series of computations, mathematicians have agreed upon an order in which to do the operations. First simplify within the parentheses, often called graphing symbols, and then evaluate any exponents. Then multiply and divide from left to

right, and finally add and subtract from left to right.

Parametric Equations

Given an equation with more than one unknown, a statistician can draw conclusions about those unknown quantities through the use of parameters, independent variables that the statistician already knows something about. For example, you can find the velocity of an object if you make some assumptions about distance and time parameters.

Recursive Equations

In recursive equations, every value is determined by the previous value. You must first plug an initial value into the equation to get the first value, and then you can use the first value to determine the next one, and so on. For example, in order to determine what the population of pigeons will be in New York City in three years, you can use an equation with the birth, death, immigration, and emigration rates of the birds. Input the current population size into the equation to determine next year's population size, then repeat until you have calculated the value for which you are looking.

 **Use mathematical models to represent and understand quantitative relationships**

Solving Systems of Equations

Two or more equations together are called a system of equations. A system of equations can have one solution, no solution, or infinitely many solutions. One method for solving a system of equations is to graph the equations on the same coordinate plane. The coordinates of the point where the graphs

intersect is the solution. In other words, the solution of a system is the ordered pair that is a solution of all equations. A more accurate way to solve a system of two equations is by using a method called substitution. Write both equations in terms of y . Replace y in the first equation with the right side of the second equation. Check the solution by graphing. You can solve a system of three equations using matrix algebra.

Graphing Inequalities

To graph an inequality, first graph the related equation, which is the boundary. All points in the shaded region are solutions of the inequality. If an inequality contains the symbol \leq or \geq , then use a solid line to indicate that the boundary is included in the graph. If an inequality contains the symbol $<$ or $>$, then use a dashed line to indicate that the boundary is not included in the graph.

► Analyze change in various contexts

Rate of Change

A change in one quantity with respect to another quantity is called the rate of change. Rates of change can be described using slope:

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x}$$

You can find rates of change from an equation, a table, or a graph. A special type of linear equation that describes rate of change is called a direct variation. The graph of a direct variation always passes through the origin and represents a proportional situation. In the equation $y = kx$, k is called the constant of variation. It is the slope, or rate of change. As x increases in value, y increases or decreases at a constant rate k , or y varies directly with x . Another way to say this is that y is directly proportional to x . The direct variation $y = kx$ also can be written as $k = \frac{y}{x}$. In this form, you can see that the ratio of y to x is the same for any corresponding values of y and x .

Slope-Intercept Form

Equations written as $y = mx + b$, where m is the slope and b is the y -intercept, are linear equations in slope-intercept form. For example, the graph of $y = 5x - 6$ is a line that has a slope of 5 and crosses the y -axis at $(0, -6)$. Sometimes you must first write an equation in slope-intercept form before finding the slope and y -intercept. For example, the equation $2x + 3y = 15$ can be expressed in slope-intercept form by subtracting $2x$ from each side and then dividing by 3: $y = -\frac{2}{3}x + 5$, revealing a slope of $-\frac{2}{3}$ and a y -intercept of 5. You can use the slope-intercept form of an equation to graph a line easily. Graph the y -intercept and use the slope to find another point on the line, then connect the two points with a line.

Geometry

► **Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships**

Angles

Two rays that have the same endpoint form an angle. The common endpoint is called the vertex, and the two rays that make up the angle are called the sides of the angle. The most common unit of measure for angles is the degree. Protractors can be used to measure angles or to draw an angle of a given measure. Angles can be classified by their degree measure. Acute angles have measures less than 90° but greater than 0° . Obtuse angles have measures greater than 90° but less than 180° . Right angles have measures of 90° .

Triangles

A triangle is a figure formed by three line segments that intersect only at their endpoints. The sum of the measures of the angles of a triangle is 180° . Triangles can be classified by their angles. An acute triangle contains all acute angles. An obtuse triangle has one obtuse angle. A right triangle has one right angle. Triangles can also be classified by their sides. A scalene triangle has no congruent sides. An isosceles triangle has at least two congruent sides. In an equilateral triangle all sides are congruent.

Quadrilaterals

A quadrilateral is a closed figure with four sides and four vertices. The segments of a quadrilateral intersect only at their endpoints. Quadrilaterals can be separated into two triangles. Since the sum of the interior angles of all triangles totals 180° , the measures of the interior angles of a quadrilateral equal 360° . Quadrilaterals are classified according to their characteristics, and include trapezoids, parallelograms, rectangles, squares, and rhombuses.

Two-Dimensional Figures

A two-dimensional figure exists within a plane and has only the dimensions of length and width. Examples of two-dimensional figures include circles and polygons. Polygons are figures that have three or more angles, including triangles, quadrilaterals, pentagons, hexagons, and many more. The sum of the angles of any polygon totals at least 180° (triangle), and each additional side adds 180° to the measure of the first three angles. The sum of the angles of a quadrilateral, for example, is 360° . The sum of the angles of a pentagon is 540° .

Three-Dimensional Figures

A plane is a two-dimensional flat surface that extends in all directions. Intersecting planes can form the edges and vertices of three-dimensional figures or solids. A polyhedron is a solid with flat surfaces that are polygons.

Polyhedrons are composed of faces, edges, and vertices and are differentiated by their shape and by their number of bases. Skew lines are lines that lie in different planes. They are neither intersecting nor parallel.

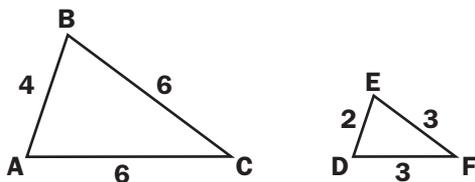
Congruence

Figures that have the same size and shape are congruent. The parts of congruent triangles that match are called corresponding parts. Congruence statements are used to identify corresponding parts of congruent triangles. When writing a congruence statement, the letters must be written so that corresponding vertices appear in the same order. Corresponding parts can be used to find the measures of angles and sides in a figure that is congruent to a figure with known measures.

Similarity

If two figures have the same shape but not the same size they are called similar figures. For example, the triangles below are similar, so angles A , B , and C have the same measurements as angles D , E , and F , respectively. However, segments AB , BC , and CA do not have the same measurements as segments DE , EF , and FD , but the measures of the sides are proportional.

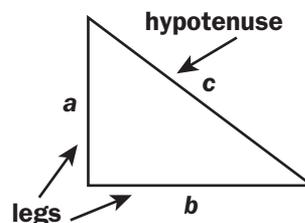
For example, $\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$.



Solid figures are considered to be similar if they have the same shape and their corresponding linear measures are proportional. As with two-dimensional figures, they can be tested for similarity by comparing corresponding measures. If the compared ratios are proportional, then the figures are similar solids. Missing measures of similar solids can also be determined by using proportions.

The Pythagorean Theorem

The sides that are adjacent to a right angle are called legs. The side opposite the right angle is the hypotenuse.

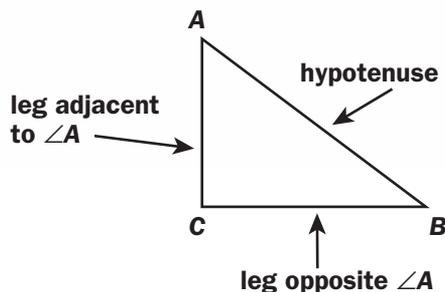


The Pythagorean Theorem describes the relationship between the lengths of the legs a and b and the hypotenuse c . It states that if a triangle is a right triangle, then the square of the length of the hypotenuse is equal to the sum of the squares of the lengths of the legs. In symbols, $c^2 = a^2 + b^2$.

Sine, Cosine, and Tangent Ratios

Trigonometry is the study of the properties of triangles. A trigonometric ratio is a ratio of the lengths of two sides of a right triangle. The most common trigonometric ratios are the sine, cosine, and tangent

ratios. These ratios are abbreviated as *sin*, *cos*, and *tan*, respectively.



If $\angle A$ is an acute angle of a right triangle, then

$$\sin \angle A = \frac{\text{measure of leg opposite } \angle A}{\text{measure of hypotenuse}}$$

$$\cos \angle A = \frac{\text{measure of leg adjacent to } \angle A}{\text{measure of hypotenuse}}, \text{ and}$$

$$\tan \angle A = \frac{\text{measure of leg opposite } \angle A}{\text{measure of leg adjacent to } \angle A}$$

► **Specify locations and describe spatial relationships using coordinate geometry and other representational systems**

Polygons

A polygon is a simple, closed figure formed by three or more line segments. The line segments meet only at their endpoints. The points of intersection are called vertices, and the line segments are called sides. Polygons are classified by the number of sides they have. The diagonals of a polygon divide the polygon into triangles. The number of triangles formed is two less than the number of sides. To find the sum of the measures of the interior angles of any polygon, multiply the number of triangles within the polygon by 180. That is, if n equals the number of

sides, then $(n - 2) 180$ gives the sum of the measures of the polygon's interior angles.

Cartesian Coordinates

In the Cartesian coordinate system, the y -axis extends above and below the origin and the x -axis extends to the right and left of the origin, which is the point at which the x - and y -axes intersect. Numbers below and to the left of the origin are negative. A point graphed on the coordinate grid is said to have an x -coordinate and a y -coordinate. For example, the point $(1, -2)$ has as its x -coordinate the number 1, and has as its y -coordinate the number -2 . This point is graphed by locating the position on the grid that is 1 unit to the right of the origin and 2 units below the origin.

The x -axis and the y -axis separate the coordinate plane into four regions, called quadrants. The axes and points located on the axes themselves are not located in any of the quadrants. The quadrants are labeled I to IV, starting in the upper right and proceeding counterclockwise. In quadrant I, both coordinates are positive. In quadrant II, the x -coordinate is negative and the y -coordinate is positive. In quadrant III, both coordinates are negative. In quadrant IV, the x -coordinate is positive and the y -coordinate is negative. A coordinate graph can be used to show algebraic relationships among numbers.

► **Apply transformations and use symmetry to analyze mathematical situations**

Similar Triangles and Indirect Measurement

Triangles that have the same shape but not necessarily the same dimensions are called similar triangles. Similar triangles

have corresponding angles and corresponding sides. Arcs are used to show congruent angles. If two triangles are similar, then the corresponding angles have the same measure, and the corresponding sides are proportional. Therefore, to determine the measures of the sides of similar triangles when some measures are known, proportions can be used.

Transformations

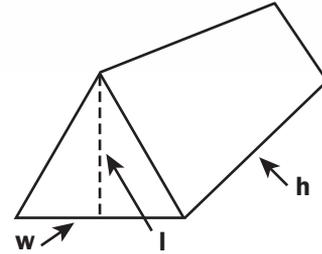
A transformation is a movement of a geometric figure. There are several types of transformations. In a translation, also called a slide, a figure is slid from one position to another without turning it. Every point of the original figure is moved the same distance and in the same direction. In a reflection, also called a flip, a figure is flipped over a line to form a mirror image. Every point of the original figure has a corresponding point on the other side of the line of symmetry. In a rotation, also called a turn, a figure is turned around a fixed point. A figure can be rotated 0° – 360° clockwise or counterclockwise. A dilation transforms each line to a parallel line whose length is a fixed multiple of the length of the original line to create a similar figure that will be either larger or smaller.

► **Use visualizations, spatial reasoning, and geometric modeling to solve problems**

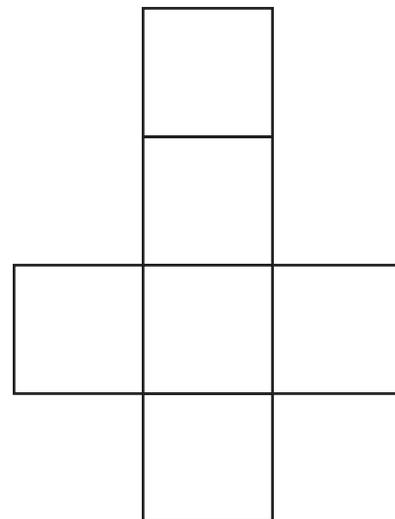
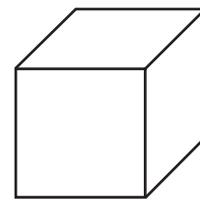
Two-Dimensional Representations of Three-Dimensional Objects

Three-dimensional objects can be represented in a two-dimensional drawing in order to more easily determine properties such as surface area and volume. When you look at the triangular prism, you can see the orientation of its three dimensions,

length, width, and height. Using the drawing and the formulas for surface area and volume, you can easily calculate these properties.



Another way to represent a three-dimensional object in a two-dimensional plane is by using a net, which is the unfolded representation. Imagine cutting the vertices of a box until it is flat then drawing an outline of it. That's a net. Most objects have more than one net, but any one can be measured to determine surface area. Below is a cube and one of its nets.



Measurement

► **Understand measurable attributes of objects and the units, systems, and processes of measurement**

Customary System

The customary system is the system of weights and measures used in the United States. The main units of weight are ounces, pounds (1 equal to 16 ounces), and tons (1 equal to 2,000 pounds). Length is typically measured in inches, feet (1 equal to 12 inches), yards (1 equal to 3 feet), and miles (1 equal to 5,280 feet), while area is measured in square feet and acres (1 equal to 43,560 square feet). Liquid is measured in cups, pints (1 equal to 2 cups), quarts (1 equal to 2 pints), and gallons (1 equal to 4 quarts). Finally, temperature is measured in degrees Fahrenheit.

Metric System

The metric system is a decimal system of weights and measurements in which the prefixes of the words for the units of measure indicate the relationships between the different measurements. In this system, the main units of weight, or mass, are grams and kilograms. Length is measured in millimeters, centimeters, meters, and kilometers, and the units of area are square millimeters, centimeters, meters, and kilometers. Liquid is typically measured in milliliters and liters, while temperature is in degrees Celsius.

Selecting Units of Measure

When measuring something, it is important to select the appropriate type and size of unit. For example, in the United

States it would be appropriate when describing someone's height to use feet and inches. These units of height or length are good to use because they are in the customary system, and they are of appropriate size. In the customary system, use inches, feet, and miles for lengths and perimeters; square inches, feet, and miles for area and surface area; and cups, pints, quarts, gallons or cubic inches and feet (and less commonly miles) for volume. In the metric system use millimeters, centimeters, meters, and kilometers for lengths and perimeters; square units millimeters, centimeters, meters, and kilometers for area and surface area; and milliliters and liters for volume. Finally, always use degrees to measure angles.

► **Apply appropriate techniques, tools, and formulas to determine measurements**

Precision and Significant Digits

The precision of measurement is the exactness to which a measurement is made. Precision depends on the smallest unit of measure being used, or the precision unit. One way to record a measure is to estimate to the nearest precision unit. A more precise method is to include all of the digits that are actually measured, plus one estimated digit. The digits recorded, called significant digits, indicate the precision of the measurement. There are special rules for determining significant digits. If a number contains a decimal point, the number of significant digits is found by counting from left to right, starting with the first nonzero digit.

If the number does not contain a decimal point, the number of significant digits is found by counting the digits from left to right, starting with the first digit and ending with the last nonzero digit.

Surface Area

The amount of material needed to cover the surface of a figure is called the surface area. It can be calculated by finding the area of each face and adding them together. To find the surface area of a rectangular prism, for example, the formula $S = 2lw + 2lh + 2wh$ applies. A cylinder, on the other hand, may be unrolled to reveal two circles and a rectangle. Its surface area can be determined by finding the area of the two circles, $2\pi r^2$, and adding it to the area of the rectangle, $2\pi rh$ (the length of the rectangle is the circumference of one of the circles), or $S = 2\pi r^2 + 2\pi rh$. The surface area of a pyramid is measured in a slightly different way because the sides of a pyramid are triangles that intersect at the vertex. These sides are called lateral faces and the height of each is called the slant height. The sum of their areas is the lateral area of a pyramid. The surface area of a square pyramid is the lateral area $\frac{1}{2}bh$ (area of a lateral face) times 4 (number of lateral faces), plus the area of the base. The surface area of a cone is the area of its circular base (πr^2) plus its lateral area (πrl , where l is the slant height).

Volume

Volume is the measure of space occupied by a solid region. To find the volume of a prism, the area of the base is multiplied

by the measure of the height, $V = Bh$. A solid containing several prisms can be broken down into its component prisms. Then the volume of each component can be found and the volumes added. The volume of a cylinder can be determined by finding the area of its circular base, πr^2 , and then multiplying by the height of the cylinder. A pyramid has one-third the volume of a prism with the same base and height. To find the volume of a pyramid, multiply the area of the base by the pyramid's height, and then divide by 3. Simply stated, the formula for the volume of a pyramid is $V = \frac{1}{3}bh$. A cone is a three-dimensional figure with one circular base and a curved surface connecting the base and the vertex. The volume of a cone is one-third the volume of a cylinder with the same base area and height. Like a pyramid, the formula for the volume of a cone is $V = \frac{1}{3}bh$. More specifically, the formula is $V = \frac{1}{3}\pi r^2h$.

Upper and Lower Bounds

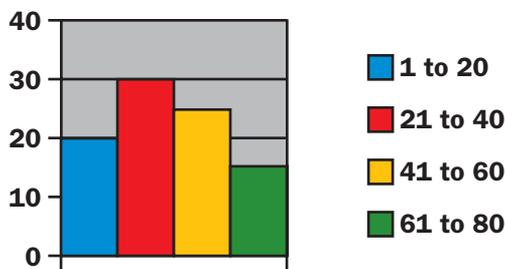
Upper and lower bounds have to do with the accuracy of a measurement. When a measurement is given, the degree of accuracy is also stated to tell you what the upper and lower bounds of the measurement are. The upper bound is the largest possible value that a measurement could have had before being rounded down, and the lower bound is the lowest possible value it could have had before being rounded up.

Data Analysis and Probability

► **Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them**

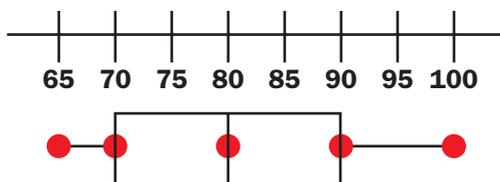
Histograms

A histogram displays numerical data that have been organized into equal intervals using bars that have the same width and no space between them. While a histogram does not give exact data points, its shape shows the distribution of the data. Histograms also can be used to compare data.



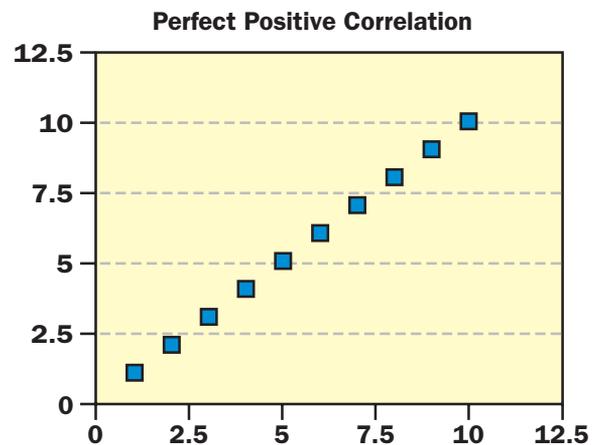
Box-and-Whisker Plot

A box-and-whisker plot displays the measures of central tendency and variation. A box is drawn around the quartile values, and whiskers extend from each quartile to the extreme data points. To make a box plot for a set of data, draw a number line that covers the range of data. Find the median, the extremes, and the upper and lower quartiles. Mark these points on the number line with bullets, then draw a box and the whiskers. The length of a whisker or box shows whether the values of the data in that part are concentrated or spread out.



Scatter Plots

A scatter plot is a graph that shows the relationship between two sets of data. In a scatter plot, two sets of data are graphed as ordered pairs on a coordinate system. Two sets of data can have a positive correlation (as x increases, y increases), a negative correlation (as x increases, y decreases), or no correlation (no obvious pattern is shown). Scatter plots can be used to spot trends, draw conclusions, and make predictions about data.



Randomization

The idea of randomization is a very important principle of statistics and the design of experiments. Data must be selected randomly to prevent bias from influencing the results. For example, you want to know the average income of people in your town but you can only use a sample of 100 individuals to make determinations about everyone. If you select 100 individuals who are all doctors, you will have a biased sample. However, if you chose a random sample of 100 people out of the phone book, you are much more likely to accurately represent average income in the town.

Statistics and Parameters

Statistics is a science that involves collecting, analyzing, and presenting data. The data can be collected in various ways—for example through a census or by making physical measurements. The data can then be analyzed by creating summary statistics, which have to do with the distribution of the data sample, including the mean, range, and standard error. They can also be illustrated in tables and graphs, like box-plots, scatter plots, and histograms. The presentation of the data typically involves describing the strength or validity of the data and what they show. For example, an analysis of ancestry of people in a city might tell you something about immigration patterns, unless the data set is very small or biased in some way, in which case it is not likely to be very accurate or useful.

Categorical and Measurement Data

When analyzing data, it is important to understand if the data is qualitative or quantitative. Categorical data is qualitative and measurement, or numerical, data is quantitative. Categorical data describes a quality of something and can be placed into different categories. For example, if you are analyzing the number of students in different grades in a school, each grade is a category. On the other hand, measurement data is continuous, like height, weight, or any other measurable variable. Measurement data can be converted into categorical data if you decide to group the data. Using height as an example, you can group the continuous data set into categories like under 5 feet, 5 feet to 5 feet 5 inches, over 5 feet five inches to 6 feet, and so on.

Univariate and Bivariate Data

In data analysis, a researcher can analyze one variable at a time or look at how multiple variables behave together. Univariate data involves only one variable, for example height in humans. You can measure the height in a population of people then plot the results in a histogram to look at how height is distributed in humans. To summarize univariate data, you can use statistics like the mean, mode, median, range, and standard deviation, which is a measure of variation. When looking at more than one variable at once, you use multivariate data. Bivariate data involves two variables. For example, you can look at height and age in humans together by gathering information on both variables from individuals in a population. You can then plot both variables in a scatter plot, look at how the variables behave in relation to each other, and create an equation that represents the relationship, also called a regression. These equations could help answer questions such as, for example, does height increase with age in humans?

► **Select and use appropriate statistical methods to analyze data**

Measures of Central Tendency

When you have a list of numerical data, it is often helpful to use one or more numbers to represent the whole set. These numbers are called measures of central tendency. Three measures of central tendency are mean, median, and mode. The mean is the sum of the data divided by the number of items in the data set. The median is the middle number of the ordered data (or the mean of the two middle numbers). The mode is the number

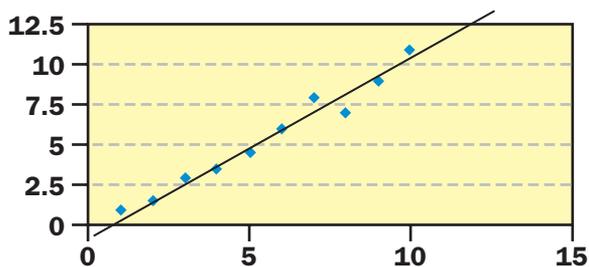
or numbers that occur most often. These measures of central tendency allow data to be analyzed and better understood.

Measures of Spread

In statistics, measures of spread or variation are used to describe how data are distributed. The range of a set of data is the difference between the greatest and the least values of the data set. The quartiles are the values that divide the data into four equal parts. The median of data separates the set in half. Similarly, the median of the lower half of a set of data is the lower quartile. The median of the upper half of a set of data is the upper quartile. The interquartile range is the difference between the upper quartile and the lower quartile.

Line of Best Fit

When real-life data are collected, the points graphed usually do not form a straight line, but they may approximate a linear relationship. A line of best fit is a line that lies very close to most of the data points. It can be used to predict data. You also can use the equation of the best-fit line to make predictions.



Stem and Leaf Plots

In a stem and leaf plot, numerical data are listed in ascending or descending order. The greatest place value of the data is used for the stems. The next greatest place value forms the leaves. For example, if the least number in a

set of data is 8 and the greatest number is 95, draw a vertical line and write the stems from 0 to 9 to the left of the line. Write the leaves from to the right of the line, with the corresponding stem. Next, rearrange the leaves so they are ordered from least to greatest. Then include a key or explanation, such as $1|3 = 13$. Notice that the stem-and-leaf plot below is like a histogram turned on its side.

```

0|8
1|3 6
2|5 6 9
3|0 2 7 8
4|0 1 4 7 9
5|1 4 5 8
6|1 3 7
7|5 8
8|2 6
9|5
    
```

Key: $1|3 = 13$

► **Develop and evaluate inferences and predictions that are based on data**

Sampling Distribution

The sampling distribution of a population is the distribution that would result if you could take an infinite number of samples from the population, average each, and then average the averages. The more normal the distribution of the population, that is, how closely the distribution follows a bell curve, the more likely the sampling distribution will also follow a normal distribution. Furthermore, the larger the sample, the more likely it will accurately represent the entire population. For instance, you are more likely to gain more representative results from a population of 1,000 with a sample of 100 than with a sample of 2.

Validity

In statistics, validity refers to acquiring results that accurately reflect that which is being measured. In other words, it is important when performing statistical analyses, to ensure that the data are valid in that the sample being analyzed represents the population to the best extent possible. Randomization of data and using appropriate sample sizes are two important aspects of making valid inferences about a population.

► **Understand and apply basic concepts of probability**

Complementary, Mutually Exclusive Events

To understand probability theory, it is important to know if two events are mutually exclusive, or complementary: the occurrence of one event automatically implies the non-occurrence of the other. That is, two complementary events cannot both occur. If you roll a pair of dice, the event of rolling 6 and rolling doubles have an outcome in common (3, 3), so they are not mutually exclusive. If you roll (3, 3), you also roll doubles. However, the events of rolling a 9 and rolling doubles are mutually exclusive because they have no outcomes in common. If you roll a 9, you will not also roll doubles.

Independent and Dependent Events

Determining the probability of a series of events requires that you know whether the events are independent or dependent. An independent event has no influence on the occurrence of subsequent events, whereas, a dependent event does influence subsequent events. The chances that a woman's first child will be a girl are $\frac{1}{2}$,

and the chances that her second child will be a girl are also $\frac{1}{2}$ because the two events are independent of each other. However, if there are 7 red marbles in a bag of 15 marbles, the chances that the first marble you pick will be red are $\frac{7}{15}$ and if you indeed pick a red marble and remove it, you have reduced the chances of picking another red marble to $\frac{6}{14}$.

Sample Space

The sample space is the group of all possible outcomes for an event. For example, if you are tossing a single six-sided die, the sample space is {1, 2, 3, 4, 5, 6}. Similarly, you can determine the sample space for the possible outcomes of two events. If you are going to toss a coin twice, the sample space is {(heads, heads), (heads, tails), (tails, heads), (tails, tails)}.

Computing the Probability of a Compound Event

If two events are independent, the outcome of one event does not influence the outcome of the second. For example, if a bag contains 2 blue and 3 red marbles, then the probability of selecting a blue marble, replacing it, and then selecting a red marble is $P(A) \times P(B) = \frac{2}{5} \times \frac{3}{5}$ or $\frac{6}{25}$.

If two events are dependent, the outcome of one event affects the outcome of the second. For example, if a bag contains 2 blue and 3 red marbles, then the probability of selecting a blue and then a red marble without replacing the first marble is $P(A) \times P(B \text{ following } A) = \frac{2}{5} \times \frac{3}{4}$ or $\frac{3}{10}$. Two events that cannot happen at the same time are mutually exclusive. For example, when you roll two number cubes, you cannot roll a sum that is both 5 and even. So, $P(A \text{ or } B) = \frac{4}{36} + \frac{18}{36}$ or $\frac{11}{18}$.

How to Use This Glossary

- Content vocabulary terms in this glossary are words that relate to this book's content. They are **highlighted yellow** in your text.
- Words in this glossary that have an asterisk (*) are academic vocabulary terms. They help you understand your school subjects and are used on tests. They are **boldfaced blue** in your text.
- Some of the vocabulary words in this book include pronunciation symbols to help you sound out the words. Use the pronunciation key to help you pronounce the words.

Pronunciation Key

a at	ô fork, all	ŋ sing
ā ape	œ boeuf	th thin
ä father	oo wood, put	th this
e end	ōō fool	zh treasure
ē me	oi oil	ə ago, taken, pencil, lemon, circus
i it	ou out	ˈ indicates primary stress (symbol in front of and <i>above</i> letter)
ī ice	u up	ˌ indicates secondary stress (symbol in front of and <i>below</i> letter)
o hot	ū use	
ō hope	ü rule	
ó saw	u pull	

à la cart menu–American-style ice cream

A

à la carte (,ä-lä-'kärt) menu A menu that offers each food and beverage item priced and served separately. (p. 310)

abrasion A scrape or minor cut. (p. 11)

* **abundant** Plentiful. (p. 406)

* **acceptable** Of good quality. (p. 572)

* **accessible** Available. (p. 663)

accident report log Shows the details of any accident that happens in a business. (p. 201)

accompaniment An item that comes with an entrée, such as a choice of potato, rice, or pasta and a choice of vegetable. (p. 312)

* **accompaniment** Something that goes well with another thing. (p. 416)

* **accurate** Correct and updated. (p. 78)

* **achieve** To do. (p. 619)

active listening The skill of paying attention and interacting with the speaker. (p. 85)

* **adapting** Positively changing. (p. 206)

additive Substance added to a food to improve it in some way. (p. 287)

* **adequate** Enough. (p. 190)

* **adhere** Follow. (p. 172)

advertising A paid form of promotion that persuades and informs the public about what a business has to offer. (p. 191)

* **affect** Act upon. (p. 38)

affirmative action Programs to locate, hire, train, and promote women and minorities. (p. 205)

aftertaste A secondary flavor that comes after the main flavor has subsided. (p. 742)

al dente "To the bite," meaning that the pasta is tender, but still firm. (p. 620)

albumin (al-'byü-mən) The clear white of an egg. (p. 433)

* **alter** To change. (p. 337)

* **alternative** Substitute. (p. 435); Option. (p. 771)

American-style ice cream Ice cream that has no eggs, is uncooked, and is made with milk, cream, sugar, and flavorings. (p. 771)

- amino acid** Small units that can be combined in certain ways to produce complete proteins. (p. 281)
- * **analyze** Study all the components of. (p. 68)
- angel food cake** A type of foam cake that is made with egg whites, but not egg yolks. (p. 756)
- * **anticipate** To predict. (p. 135)
- antipasto (,an-tē-'pas-(,)tō)** Italian for before the meal. A typical antipasto tray includes cold meats, such as Genoa salami and various hams, assorted cheeses, olives, marinated vegetables, and sometimes fruits. (p. 481)
- AP weight** The weight of a product before trimming. (p. 351)
- * **appeal** Attraction. (p. 314)
- appetizer** A small portion of hot or cold food meant to stimulate the appetite that is served as the first course of a meal. (p. 133)
- apprentice** One who works under the guidance of a skilled worker to learn a particular trade or art. (p. 65)
- * **appropriate** Correct. (p. 461)
- aroma** Distinctive pleasing smell. (p. 410)
- * **array** A wide selection. (p. 58)
- * **artistic** creative. (p. 456)
- * **aspect** Part of a problem or challenge. (p. 349)
- aspic ('as-pik)** A savory jelly made from meat or vegetable stock and gelatin. (p. 480)
- as-purchased (AP) price** The bulk price. (p. 349)
- as-served (AS) portion** The actual weight of the food product that is served to customers. (p. 350)
- * **atmosphere** Overall mood. (p. 71)
- au jus (ō-'zhü(s))** Accompanied by the juices obtained from roasting meat. (p. 499)
- autocratic** A management style in which information and policies move from the top down. (p. 172)
- average check method** Prices items near an average check that you would like each customer to spend. (p. 322)
- avulsion (,ə-'væl-shən)** An injury in which a portion of the skin is partially or completely torn off. (p. 11)
-
- B**
- bacon** Meat that comes from the side of a pig, and is cured and often smoked for flavor. (p. 432)
- bacteria (bak-'tir-ē-ə)** Tiny, single-celled microorganisms. (p. 14)
- bag-in-the-box system** A cardboard box with a bag of concentrated soda syrup inside. (p. 122)
- bain marie (,ban-mə-'rē)** Water bath used to keep foods such as sauces and soups warm. (p. 242)
- bake** Cook with dry heat in a closed environment, usually an oven. No fat or liquid is used. (p. 382)
- baker's percentage** In a formula, includes the percentage of each ingredient in relation to the weight of flour in the final baked product. (p. 333)
- baking blind** To prepare pie shells in advance. (p. 767)
- baking cup** A paper liner that keeps muffins from sticking to the muffin pan. (p. 738)
- baking powder** A leavening agent made up of baking soda, an acid such as cream of tartar, and a moisture absorber such as cornstarch. (p. 694)
- baking soda** A chemical leavening agent that must be used with acid to give off CO₂ gas. (p. 694)
- balance** Dividing space to meet customer and preparation staff needs. (p. 182)
- balance scale** A scale with two platforms. One platform holds the item being weighed. The other platform holds weights. These weights are added or removed until the two platforms are balanced. (p. 335)
- banquette (ban-'ket)** A type of seating arrangement in which customers are seated facing the server with their backs against the wall. (p. 146)
- bar code** A series of bars, spaces, and sometimes numbers that contain coded information and are designed to be scanned into a computer system. (p. 365)
- barding** Wrapping a lean meat with fat, such as bacon, before roasting. A few minutes before doneness, you remove the meat from the oven, unwrap the fat, put the meat back in the oven, and allow the surface of the meat to brown. (p. 588)
- barley** A hardy, adaptable grain that can grow in both warm and cold climates. (p. 626)
- barnacle ('bär-ni-kəl)** A crustacean that attaches itself to rocks, boats, or other sea life. (p. 552)
- barquette (bär-ket)** Dough formed into a small boat-shaped shell. (p. 502)
- base** A stock that is purchased in a powdered or concentrated form. (p. 510)
- basic pie dough** Sometimes called 3-2-1 dough. This ratio refers to the weight of three parts flour, two parts fat, and one part water. (p. 765)
- baste** A process in which fat drippings are spooned over a large bird every 15–20 minutes. (p. 577)
- basting** Moistening foods with melted fats, pan drippings, or another liquid during cooking. (p. 383)
- batch cooking** The process of preparing small amounts of food several times throughout a food-service period. (p. 300)
- batonnet ('bä-tō-,nä)** Matchstick-shaped cuts that are ¼-inch thick. (p. 259)
- batter** A semiliquid mixture that contains ingredients such as flour, milk, eggs, and seasonings. (p. 384)

- Bavarian** A dessert made of whipped cream, gelatin, and a flavored custard sauce. (p. 773)
- beat** Agitate ingredients vigorously to add air or develop gluten. (p. 699)
- béchamel** A basic French white sauce made with milk and a thickener. (p. 517)
- bench box** A covered container in which dough can be placed before shaping. (p. 718)
- bench rest** A time when rounded portions of dough are placed in bench boxes or left covered on the work bench. (p. 718)
- * **beneficial** Helpful. (p. 472)
- benefits** Services or payments provided by an employer in addition to wages. (p. 110)
- bid** A price quote. (p. 359)
- biscuit** A small, round quick bread. (p. 445)
- biscuit method** Requires cutting or rubbing the fat into the dry ingredients. This is done until the fat and dry ingredients resemble cornmeal. Then, the liquid ingredients are added. (p. 731)
- bisque ('bisk)** Specialty soup that is usually made from shellfish and contain cream. (p. 531)
- bivalve ('bī-,valv)** A mollusk that has two shells that are hinged together. (p. 550)
- blanching** Using the boiling method to partially cook food. (p. 390)
- blend** A combination of herbs, spices, and seeds. (p. 404)
- blending** Mixing or folding two or more ingredients together until they are evenly combined. (p. 699)
- blending method** Combines the liquid, sugar, liquid fat, and eggs at the same time in baking. Then, the dry ingredients are added to the mixture. (p. 731)
- blind taste test** A food test in which food samples are not labeled so that the testers will not know which product they are tasting. (p. 424)
- boiling** A moist cooking technique in which you bring a liquid, such as water or stock, to the boiling point and keep it at that temperature while food cooks. (p. 389)
- boiling point** Temperature at which a liquid boils. (p. 389)
- bolster** Helps keep out food particles from between the tang and the handle on a knife. (p. 253)
- boneless fish** Fish that have cartilage instead of bones. Many boneless fish also have smooth skin instead of scales. (p. 542)
- booth** A type of seating arrangement in which the table rests against, or is attached to, a wall. (p. 145)
- bouchée (bü-'shā)** A shell made from puff pastry, used for appetizers or desserts. (p. 502)
- bouquet garni (bü-'kā gār-'nē)** A combination of fresh herbs and vegetables tied in a bundle with butcher's twine. The bundle is dropped into the stock pot and allowed to simmer. (p. 410)
- bouquetière (,bü-kə-'tyēr)** Bouquet of three or more vegetables. (p. 658)
- braising** A long, slow cooking process; meat is first seared and the pan deglazed before the moist cooking technique is used. (p. 392)
- bread flour** Flour that has a high gluten-forming protein content to allow bread to rise fully. (p. 688)
- breeding** A coating made of eggs and crumbs. (p. 384)
- break even** When costs equal income. (p. 175)
- breakfast meats** Meats such as ham, bacon, Canadian bacon, sausage, hash, and steak. (p. 432)
- brochette (brō-'shet)** A combination of meat, poultry, fish, and vegetables served on a small skewer. (p. 502)
- broiling** To cook food directly under a primary heat source. (p. 387)
- broth** A liquid made from simmered meat and vegetables. (p. 527)
- brown rice** Rice with a tan color, a chewy texture, and a slightly nutty taste. (p. 625)
- brown stock** A stock that is made from either beef, veal, chicken, or game. It gets its color from roasting the ingredients without water, in a hot oven. (p. 511)
- brunoise (brün-'wäz)** 1/8-inch thick cubes. (p. 259)
- buffet** A style of service in which all the food is attractively displayed on a table for the customers to see. (p. 148)
- bulk** Large quantities of a single food product. (p. 349)
- business plan** A document that describes a new business and a strategy to launch that business. (p. 76)
- busser** A foodservice worker who helps maintain an inviting table and keeps the service station stocked with supplies. (p. 118)
- butler service** The server carries the prepared food on a silver tray to standing or seated customers. Customers then serve themselves. (p. 148)
- butterflied** When a fish is dressed, then cut so the two sides lie open, yet are attached by skin. (p. 545)
- bypassing** When people or materials must walk or be moved past unrelated stations during foodservice. (p. 183)
- by-products** Usable leftover parts of food after preparation. (p. 351)

C

- cafeteria** A restaurant where customers serve themselves, or order at a counter. (p. 71)
- cake flour** Flour that is lower in protein than bread flour and pastry flour and produces a softer and more tender product than bread flour. (p. 688)
- calamari** The Italian name for squid. (p. 556)

- calculate** To work with numbers. (p. 84)
- calibrate ('ka-lə-brāt)** To adjust (as a thermometer) for accuracy. (p. 35)
- California menu** All three meals are available all day; some restaurants list them on the same menu. (p. 310)
- Canadian bacon** A breakfast meat from boneless pork loin. It is smoked and brined, with a thin layer of fat on its surface. (p. 432)
- canapé ('ka-nə-,pā)** An appetizer that is served on a small piece of bread or toast. (p. 456)
- cancer** The division and growth of cells that interferes with normal body functions. (p. 295)
- caper** A flower bud of a Mediterranean shrub, used for seasoning. (p. 563)
- cappuccino (,ka-pə-'chē-(,)nō)** A beverage made from espresso and steamed and foamed milk. (p. 123)
- caramelization ('ker-ə-məl-ə-,zā-shən)** The process of cooking sugar to high temperatures to create aroma and flavor. (p. 379)
- carbohydrate** The nutrient that is the body's main source of energy. (p. 280)
- carcass** What is left of the whole animal after it has been slaughtered. (p. 589)
- cardiopulmonary resuscitation (,kär-dē-ō-'pül-mə-ner-ē ri-,sə-sə-'tā-shən)** Emergency care that is performed on people who are unresponsive. (p. 12)
- cardiovascular (,kär-dē-ō-'vas-kyə-lər)** Heart-related. (p. 282)
- carryover cooking** The cooking that takes place after you remove something from a heat source. (p. 382)
- cashier** The employee who correctly reads the amount of the bill, processes the payment, and makes change. (p. 118)
- casserole** A mixed food dish baked and served in a casserole dish. (p. 619)
- casual-dining establishment** Restaurant that features a relaxed environment and mid-range prices. (p. 142)
- catering director** Coordinates the food for each function. (p. 60)
- cavity** Hollow interior. (p. 582)
- centerpiece** A decorative object placed on tables to add beauty and interest. (p. 158)
- cephalopod ('se-fə-lə-,pād)** A mollusk that has a thin internal shell. Cephalopods have tentacles, or false legs, attached to the head near the mouth. (p. 550)
- certification** Proof that you are an expert in a specific topic, such as culinary arts, baking, and pastry making. (p. 63)
- chafing ('chā-fiŋ) dish** A device that holds a large pan of food over a canned heat source. (p. 148)
- chain restaurant** A restaurant that has two or more locations that sell the same products and are operated by the same company. (p. 75)
- chapatti (chə-pä-tē)** An Indian whole-wheat flatbread. (p. 489)
- * characteristic** Feature. (p. 528)
- charcuterie** The name of a guild that prepared and sold cooked items made from pigs. (p. 458)
- cheddaring** A technique in which slabs of cheese are stacked and turned to squeeze out the whey; done for hard cheeses. (p. 471)
- cheesecloth** A loose-woven cotton cloth used in cheesemaking and cooking. (p. 518)
- chef's coat** A working coat that traditionally has two rows of buttons down the front, long sleeves, and turned-up cuffs. (p. 26)
- chemical dough conditioners** Substances that are added to hard lean doughs to strengthen the glutens that give hard lean dough products their dense structure. (p. 708)
- chewy cookie** A cookie with a high ratio of eggs, sugar, and liquid, but a low amount of fat. (p. 748)
- chiffon (shi-'fän) cake** A variation of a genoise cake made by using whipped egg whites to lighten the batter. (p. 756)
- chiffonade (,shi-fə-'näd)** To finely slice or shred leafy vegetables or herbs. (p. 255)
- cholesterol (kə-'les-tə-,rōl)** A fatlike substance that is found in all body cells and in all animal foods. (p. 282)
- chowder** A specialty soup made from fish, seafood, or vegetables. (p. 531)
- chutney** A condiment made of fruit, vinegar, sugar, and spices. (p. 642)
- clarified butter** Purified butterfat. This means that the butter is melted with the water and milk solids are removed. (p. 521)
- clarify** To remove particles as they float to the top of a liquid. (p. 528)
- * clarity ('kler-ə-tē)** How clear something is. (p. 518)
- classical French service** The most elegant and elaborate style of service; involves presenting or preparing some foods tableside. (p. 146)
- * classify** To sort. (p. 542)
- cleaning** Removing food and other soil from a surface. (p. 18)
- clear soup** Made from clear stock or broth. Clear soups are not thickened. (p. 527)
- client base** The customers who come regularly to a business. (p. 119)
- clientele** The people who will be a business's main customers. (p. 189)

- clip-on** A special list that is fastened directly to the menu. (p. 318)
- club sandwich** A triple-decker sandwich that features cold, sliced cooked turkey and ham, or bacon. (p. 499)
- coagulate** When proteins change from a liquid or semiliquid state to a drier, solid state. (p. 378)
- cobbler** A deep-dish fruit dessert. (p. 644)
- colander** A container with small holes in the bottom for rinsing and draining food. (p. 621)
- cold soup** A specialty soup that may be cooked or uncooked and then chilled. (p. 531)
- cold-pack cheese** Also known as club cheese; made from one or more varieties of cheese, finely ground and mixed until it is spreadable. (p. 474)
- collagen** Soft, white tissue that breaks down into gelatin and water during slow, moist cooking processes. (p. 588)
- * **collapsing** Falling. (p. 756)
- combination cooking** Uses both moist and dry cooking techniques. (p. 376)
- commercial operation** An operation that earns more than enough to cover daily expenses. (p. 70)
- commitment** The dedication that you show to doing something. (p. 89)
- * **compensate** Make up for the lack of something. (p. 92)
- compensatory time** Paid time off to reimburse workers for overtime. (p. 106)
- competitor** Business that offers similar products or services to the ones you offer. (p. 189)
- competitors' pricing method** Charges approximately what the competition charges for similar menu items. (p. 322)
- * **complement** To go together well with another thing. (p. 416)
- complete protein** A protein source that provides all of the amino acids. (p. 281)
- * **complex** Involved and possibly difficult. (p. 309)
- * **composed** Made up of. (p. 588)
- compote** Fresh or dried fruits that have been cooked in a sugar syrup. (p. 642)
- compotier (,käm-pōt-tē-'yā)** A deep, stemmed dish used to serve compotes, candies, and nuts. (p. 645)
- compound butter** Softened butter with seasonings added to it. (p. 521)
- condiment** Mustard, pickle relish, and ketchup, etc., traditionally served as an accompaniment to food. (p. 152); Something served as an accompaniment. (p. 416)
- conduction** Heats food by direct contact between a hot surface and the food. (p. 234)
- * **confirm** To make sure. (p. 361)
- connective tissue** Tissue that holds muscle fiber together. (p. 571)
- * **consistency** Texture. (p. 731)
- * **consistent** Free from variations. (p. 330)
- consommé (,kän(t)-sə-'mā)** A concentrated, clear soup made from a rich broth. (p. 528)
- contaminated** Unfit to be eaten. (p. 14)
- * **content** Amount. (p. 605)
- continental menu** A breakfast menu that provides mostly a selection of juices, beverages, and baked goods. (p. 311)
- continuous breadmaking** Also called commercial baking, mixing and kneading are done in a spiral mixer. (p. 715)
- * **contrast** As a comparison. (p. 765)
- * **contribution** Role. (p. 691)
- contribution margin method** A pricing method that uses a general contribution of customers to costs besides food for running a kitchen. You would add the average contribution margin per guest to the item's standard food cost. (p. 322)
- convection** A process in which the liquid closest to the bottom of the pan is heated and rises to the top. (p. 234, 389)
- convection oven** An oven that has a fan that circulates the oven's heated air. (p. 682)
- conversion factor** The number that comes from dividing the yield you want by the existing yield in a recipe. (p. 338)
- convert** To adjust ingredient quantities in a standardized recipe. (p. 335)
- cooking line** The arrangement of kitchen equipment. (p. 221)
- cookware** Pots, pans, and baking dishes. (p. 262)
- corn** A grain that can be eaten fresh or as a dried grain. (p. 627)
- corporation** A business formed when a state grants an individual or a group of people a charter with legal rights to form a business. (p. 77)
- * **correspond** To compare closely to. (p. 714)
- cost per portion** The cost of a portion that you would serve to an individual customer. (p. 353)
- cottage fries** French fried potatoes that are cut into ½-inch thick circles, usually served during breakfast. (p. 443)
- coulis (kü-'lē)** A sauce made from a fruit or vegetable purée. (p. 518)
- count** The number of individual items used in a recipe. (p. 337)
- counter scale** A scale with a platform small enough to be placed on a counter. (p. 225)
- counter service** Customers sitting at a counter, rather than a booth, banquette, or table. (p. 143)
- course** A part of a meal that is served at one time. (p. 118)

- couscous ('küs-,küš)** A wheat product made from semolina that is milled from wheat. (p. 627)
- cover** An individual place setting that includes utensils, glasses, and dishes. (p. 127)
- covers** Individual meals served in a restaurant. (p. 322)
- cream soup** A velvety-smooth thick soup. It is made with cooked vegetables that are sometimes puréed. (p. 530)
- creaming** Vigorously combining softened fat and sugar to add air. (p. 699)
- creaming method** Sugar and pre-softened shortening are creamed together with a mixer on low speed until the mixture is light and fluffy. Eggs are then added one at a time. (p. 731)
- crêpe ('krāp)** A small, thin pancake made with egg batter. (p. 489)
- crisp cookie** A cookie with very little moisture in the batter. It also has a high ratio of sugar. (p. 748)
- * **critical** Necessary. (p. 714)
- critical control point** A step in the flow of food where contamination can be prevented or eliminated. (p. 32)
- croissant** A flaky, crescent-shaped roll. (p. 488)
- cross-contamination** The movement of harmful microorganisms from one place to another. (p. 14)
- crosshatch** Grill mark set at a 90-degree angle. (p. 579)
- cross-train** Giving employees work experience in many different tasks. (p. 59)
- croutons ('krü-tānz)** Small pieces of bread that have been grilled, toasted, or fried and sometimes seasoned, used as a garnish for salads. (p. 463)
- crudité (,krü-di-'tā)** Raw sliced vegetables served with dips. (p. 479)
- crumb** The internal texture of a baked product. (p. 688)
- crust** The outer surface of a bread or roll. (p. 708)
- crustacean (,krās-'tā-shens)** A shellfish with a hard outer shell and a jointed skeleton. (p. 553)
- cuisine** A style of cooking. (p. 69)
- culinary scientist** Sets new standards in food technology by creating new food products and cooking methods. (p. 60)
- curdle ('kər-dəl)** To separate, as in egg yolks and whites that have been cooked at too high of a temperature. (p. 437)
- curing** Preserving pork with salt, sugar, spices, flavoring, and nitrites. (p. 597)
- custard** Dessert made of eggs, milk or cream, flavorings, and sweeteners. (p. 771)
- custard-style ice cream** Ice cream made with cooked vanilla custard that consists of cream, milk, eggs, sugar, and flavorings. (p. 771)
- cut in** To mix solid fat with dry ingredients until lumps of the desired size remain. (p. 699)
- cycle menu** A menu that is used for a set period of time, such as a week, a month, or even longer. At the end of this time period, the menu repeats daily dishes in the same order. (p. 310)

D

- Daily Production Report** Shows how much food was used, sold, and left over each day. (p. 364)
- daily value** The amount of a nutrient that a person needs every day, based on a 2,000-calorie diet. (p. 290)
- Danish pastry dough** Dough that is sweeter and richer than croissant dough. (p. 711)
- dark meat** Parts of a bird that have more muscle and connective tissue. (p. 571)
- * **deal** Amount. (p. 751)
- debone** To remove bones from meat, poultry, or fish. (p. 350)
- deduction** The money withheld from your gross pay for taxes, insurance, and other fees. (p. 109)
- deep-frying** To cook foods by completely submerging them in heated fat or oil. (p. 385)
- deflate** Cause dough to lose volume. (p. 734)
- deglaze** To use a small amount of liquid or fat to remove any leftover scraps of food from sautéing or searing from the pan. (p. 392)
- dehydrated (,dē-'hī-,drāt-əd)** Water has been removed. (p. 434)
- dehydration (,dē-'hī-'drā-shən)** A serious fluid imbalance in the body. (p. 293)
- delegate** To give responsibility to another person. (p. 172)
- * **delicate** Fragile. (p. 384)
- demi-glace ('de-mē-,glas)** A sauce that is half espagnole sauce and half brown stock that has been reduced by half. (p. 519)
- demitasse ('de-mi-,tas)** A half-size cup for espresso. (p. 124)
- democratic** A management style in which everyone is involved in the decision-making process. (p. 172)
- design** How the dining room, kitchen, and storage areas are laid out. (p. 182)
- * **designate** To be a sign of. (p. 433)
- * **desired** Wanted. (p. 739)
- * **deteriorate** To go down in quality; to become worse in value. (p. 363, 740)
- * **determine** To find out. (p. 207)
- devein (,dē-'vān)** To remove a shrimp's intestinal tract, located along the back. (p. 553)
- * **device** An item that serves a specific purpose. (p. 148)

- diabetes** An illness that affects the body's ability to convert blood sugar into energy. (p. 294)
- diagonal** A cut that results in an oval or elongated slice of a cylindrical fruit or vegetable. (p. 255)
- * **dictate** To determine through necessity. (p. 309)
- Dietary Guidelines for Americans** Information on proper eating habits for healthy Americans ages two years and older. (p. 290)
- digestible** The nutrients, such as protein, are more accessible to the body. (p. 663)
- * **diminish** To decrease. (p. 638)
- dining room supervisor** Coordinates and assigns duties to the hosts, servers, and bussers. (p. 60)
- direct contamination** Raw foods, or the plants or animals from which they come, are exposed to toxins. (p. 14)
- direct labor cost** Wages paid to employees. (p. 173)
- direct marketing** A form of advertising in which materials, such as letters and advertisements, are mailed directly to customers. (p. 192)
- disability** A physical or mental impairment that substantially limits one or more major life activities. (p. 206)
- * **discard** To throw away. (p. 559)
- discrimination** Unfair treatment based on age, gender, race, ethnicity, religion, physical appearance, disability, or other factors. (p. 106)
- disposable income** Money that people have left over for extras after paying bills. (p. 321)
- disposal point** The point at which food remaining after being eaten is disposed of properly. (p. 44)
- * **distinct** Separate. (p. 401)
- distraction** Something that turns your attention to something else. (p. 85)
- docking** Process of making small holes in the surface of an item before baking. (p. 722)
- * **document** To write down the details of what happened. (p. 12)
- dolly** A small wheeled cart. (p. 225)
- double pan** A sheet pan placed inside a second pan of the same size. (p. 753)
- double-entry bookkeeping** Record-keeping in which transactions are recorded in at least two places so that records are balanced. (p. 173)
- dough** Combination of dry and liquid ingredients for a baked product; contains less liquid than a batter. (p. 698)
- doughnut** A sweetened, deep-fried pastry that often is ring-shaped. (p. 445)
- drained weight** The weight of a food product without the packing medium. (p. 652)
- drawn** Fish that have had their gills and entrails removed. (p. 544)
- dredging** Coating foods with flour; coating poultry parts with seasoned flour. (p. 384, 579)
- dressed** Drawn fish that have had their fins, scales, and sometimes their head removed. (p. 544)
- dressings** A sauce that is added to salads to give them flavor and to help hold the ingredients together. (p. 468)
- dried milk solids** Milk product used in baked goods. (p. 689)
- drip loss** The loss of moisture that occurs as a fish thaws. (p. 546)
- drop batter** Batter thick enough it needs to be dropped from a portion scoop. (p. 731)
- drop cookie** A cookie with soft batter or dough that uses the creaming process. (p. 751)
- drupe** A fruit that has soft flesh, thin skin, and one pit, or stone. (p. 638)
- dry cooking technique** Cooking technique that uses oil, fat, the radiation of hot air, or metal to transfer heat. (p. 376)
- dry cure** Food is coated in salt, sweeteners, and flavorings, and then wrapped in paper or cheesecloth. (p. 457)
- du jour menu** A menu that lists dishes that are available on a particular day. (p. 310)
- * **duration** The amount of time something lasts. (p. 292)
- dust** To sprinkle very lightly with flour. (p. 766)

E

- edible ('e-də-bəl) portion (EP)** After preparation, the consumable food product that remains. (p. 350)
- * **effect** Result. (p. 382)
- * **efficient** Productive. (p. 222)
- egg substitutes** Substitutes for people with dietary concerns such as high cholesterol. (p. 434)
- * **elaborate** Detailed. (p. 463)
- elastic** Stretchy and flexible. (p. 739)
- elastin** A hard, yellow tissue that does not break down during cooking. Also referred to as gristle. (p. 588)
- electronic scale** A scale that has a spring that is depressed when an item is placed on its platform. The weight is displayed on a digital readout. (p. 336)
- * **elements** Parts. (p. 151)
- emergency** A potentially life-threatening situation that usually occurs suddenly and unexpectedly. (p. 9)
- empathy** The skill of thinking about what it would be like in another's place. (p. 107)
- * **emphasize** Point out. (p. 502)

- employee recruiter** Helps businesses find the right employees. (p. 76)
- employment agency** A business that put employers in touch with potential employees. (p. 96)
- emulsified shortening** A type of fat that helps create a smooth consistency throughout the mixture. (p. 756)
- emulsifier** An additive, such as egg yolk, that allows unmixable liquids, such as oil and water, to combine uniformly. (p. 474)
- en papillote (ən ,pä-pē-'yō)** A method of steaming that involves wrapping fish or shellfish in parchment paper with vegetables, herbs, and sauces or butters. (p. 559)
- * **enforce** Carry out. (p. 198)
- English muffin** Made from bread dough that is cut into rounds and then toasted. (p. 446)
- * **enhance** Increase the quality of. (p. 379)
- enriched rice** Rice that has a vitamin and mineral coating added to the grain. (p. 625)
- * **entice** Attract. (p. 317)
- entrée ('än-trā)** Main dish. (p. 309)
- entrepreneur (,änn-trə-p(r)ə-'n(y)ür)** A self-motivated person who creates and runs a business. (p. 74)
- entry-level** Jobs for which you do not need to have training or experience. (p. 64)
- environmental impact statement** Describes the impact of the proposed facility and any negative effects it might have on environment. (p. 200)
- ergonomics (,ər-gə-'nä-miks)** The science of efficient and safe interaction between people and the things in their environment. (p. 207)
- escargot (,es-kär-'gō)** The French word for snails. (p. 557)
- espresso (e-'spre-(,)sō)** A beverage made by forcing hot water and steam through finely ground, dark-roasted coffee beans. (p. 122)
- ethics ('e-thiks)** Your internal guidelines to distinguish right from wrong. (p. 108)
- ethnic menu** A menu that represents food choices from a specific country. (p. 312)
- ethylene ('e-thē-,lēn) gas** An odorless, colorless gas that is emitted naturally as fruits ripen. (p. 639)
- * **evaluate** Study. (p. 63)
- evaluation** A report of how well you perform your duties, and what you can do to improve. (p. 105)
- evaporate** To escape as vapor. (p. 376)
- executive chef** Manages all kitchen operations. (p. 60)
- expense** Money that goes out of a business. (p. 174)
- extender** An item made from leftover, low-cost ingredients. (p. 319)
- extract** A concentrated flavor such as lemon and vanilla. (p. 401)
- * **extracted** Drawn out. (p. 392)

F

fabricated cut A smaller portion of meat taken from primal cuts. (p. 589)

* **factor** Issue. (p. 184)

factor method A common pricing method for restaurants with successful past performance records. You must first determine what the food cost percent should be. Then, take that food cost percent and divide it into 100%, which will give you your factor. Multiply the factor by the menu item cost. (p. 321)

family service Meal service in which food is delivered on a large platter or dish to an individual table and customers serve themselves. (p. 145)

fat Substance that regulates bodily functions and helps carry some vitamins through the system. (p. 282)

fat cap The fat that surrounds muscle tissue. (p. 588)

fatty fish Fish that have a relatively large amount of fat. (p. 542)

fermentation (,fər-mən-'tā-shən) A process in which yeast breaks down sugars into carbon dioxide gas and alcohol. (p. 694)

fermented ((,)fər-'men-ted) Chemically changed in brines or vinegars flavored and seasoned with dill, garlic, sugar, peppers, or salt. (p. 416)

fiber A unique form of a complex carbohydrate that does not provide energy. (p. 280)

* **field** Line of work. (p. 106)

fillets The sides of fish. (p. 544)

fine-dining restaurant A restaurant that provides an environment featuring excellent food, elegant decor, and superior service. (p. 71, 142)

finger food Hors d'oeuvres presented on platters from which each guest serves him- or herself. (p. 477)

first aid Assisting an injured person until professional medical help can be provided. (p. 9)

first in, first out An inventory system in which food products that are oldest are used first, so that all products are fresh when used. (p. 38)

fish stock A stock that is made by slowly cooking the bones of lean fish or shellfish. (p. 513)

fixed menu A menu that offers the same dishes every day for a long period of time. (p. 310)

flake Break away in small layers. (p. 559)

flaky dough A pie dough in which flour is not completely blended with the fat. (p. 766)

- flambé (fläm-'bā)** To cook a food tableside using flames as part of the preparation. (p. 147)
- flammable** Quick to burn. (p. 6)
- flat** A shallow box or container used to hold foods. (p. 349)
- flat fish** Fish that have a backbone running horizontally through the center of the fish. They swim horizontally and have both eyes on the top of their heads. (p. 542)
- flatware** Dining utensils, such as spoons, forks, and knives. (p. 155)
- flavor enhancer** Increases the way you perceive the food's flavor without changing the actual flavor. (p. 400)
- flavored oil** An oil that has been enhanced with ingredients such as herbs, spices, and garlic. (p. 416)
- flavoring** An ingredient that actually changes the natural flavor of the foods it is added to. (p. 400)
- flexibility** The ability to adapt willingly to changing circumstances. (p. 89)
- floret** A small flower that makes up the head of some plants. (p. 647)
- flow of food** The path food takes from when it is received by an establishment to when it is disposed of as waste. (p. 31)
- fluting** A manner of decorating crust by making uniform folds around the edge of the pie. (p. 767)
- focaccia** An Italian bread that is flavored with olive oil and herbs. (p. 489)
- focal point** A service point. (p. 145)
- fold** To use a rubber spatula to carefully mix the egg whites and batter to not lose volume. (p. 446); Gently adding light, airy ingredients such as eggs to heavier ingredients by using a smooth circular movement. (p. 699)
- fondant** A mixture of sugar, water, and flavorings that serves as a base for icings. (p. 762)
- fondue** Dipping foods into a central heated pot. (p. 645)
- food allergy** An allergic reaction triggered by the immune system in response to a particular food. (p. 294)
- Food Code** Guidelines for handling food safely. (p. 200)
- food cost percentage** The ratio of the cost of food served to the sales of food served. (p. 173)
- food court** A single area in malls or shopping centers with many quick-service restaurants. (p. 143)
- food preparation** Cooking and preparing foods to be eaten. (p. 42)
- food thermometer** A device used to check the temperatures of foods. (p. 34)
- foodhandler** A worker who is in direct contact with food. (p. 26)
- foodservice consultant** Offers advice and information to other foodservice business owners and managers. (p. 75)
- foodservice director** Manages the banquet operations of hotels, banquet facilities, hospitals, and universities. (p. 60)
- forcemeat** A mixture of ground, raw meat or seafood that is emulsified with fat. (p. 456)
- forecasting** Anticipating future trends. (p. 175)
- formula** A special type of recipe used in the bakeshop. (p. 331)
- *foundation** Starting point. (p. 488)
- franchise** A company that sells a business owner the right to use its name, logo, concept, and products. In return, the business owner agrees to run the business as outlined by the franchise company. (p. 75)
- free enterprise** A system in which businesses or individuals may buy, sell, and set prices with little government control. (p. 78)
- free-form loaf** Bread loaves that are shaped by hand, then baked, seam side down, on flat pans or directly on a hearth. (p. 718)
- freezer burn** Discoloration and dehydration caused by moisture loss as food freezes. (p. 546)
- French toast** Bread that has been dipped in a batter and then sautéed. (p. 448)
- fresh cheese** A soft cheese that is not ripened or aged after it is formed into a final shape. (p. 473)
- frittata (frē-'tä-tə)** A flat, open-face omelet. Eggs are beaten and mixed with the precooked filling ingredients, and then cooked over low heat without stirring. (p. 439)
- frozen yogurt** American ice cream with the addition of yogurt. (p. 771)
- frying** Cooking foods in hot fat or oil. (p. 384)
- full-service restaurant** A restaurant where servers take customer orders and then bring the food to the table. (p. 71)
- fumet (fyü-'mā)** A fish stock with lemon juice or other acids are added to the water; stronger flavor than fish stock. (p. 513)
- *function** An event. (p. 242); Purpose. (p. 445)
- fungi ('fən-gī)** Spore-producing organisms found in soil, plants, animals, water, and in the air. (p. 16)

G

- garde manger (,gärd ,män-'zhā)** The chef responsible for preparing cold food items. (p. 59)
- garde manger brigade** A team of chefs under the garde manger chef who handle cold food preparation. (p. 457)
- garnish** An edible food that is placed on or around food to add color or flavor. (p. 314)

- * **gauge** Type and thickness of the material. (p. 262)
- gelatinization (jə-,la-tə-nə-'zā-shən)** The process of starch granules absorbing moisture when placed in a liquid. (p. 517)
- general safety audit** A review and inspection of all safety procedures and equipment. (p. 12)
- genetically (jə-'ne-ti-k(ə)-lĕ) engineered food** Food that is made by recombining genes. (p. 199)
- genoise (zhā-'nwäz)** European sponge cake. (p. 756)
- giblets** The edible internal organs of a bird. (p. 571)
- gipfels** Tighter half circles made by Swiss and German bakers in croissant dough. (p. 710)
- glassware** Glasses used to hold beverages such as juice, water, iced tea. (p. 155)
- glaze** A stock that is reduced and concentrated. (p. 513)
- glucose** A usable energy source for your body. (p. 280)
- gluten** A firm, elastic substance that affects the texture of baked products. (p. 688)
- glycogen ('glī-kə-jən)** A storage form of glucose. (p. 293)
- grading** Applying specific quality standards to food products. (p. 198)
- grain** The direction of muscle fibers, or treads, in meat. (p. 607); A single, small, hard seed. (p. 624)
- granola (grə-'nō-lə)** A blend of grains, nuts, and dried fruits. (p. 444)
- gravy** A type of sauce made from meat or poultry juices; a liquid such as milk, cream, or broth; and a thickening agent such as a roux. (p. 521)
- griddle** A flat, solid plate of metal with a gas or electric heat source. (p. 386)
- grilled sandwich** A sandwich where the bread is browned on the outside on the griddle. (p. 496)
- grilling** A cooking method that places food on a heated grill. (p. 386)
- gross pay** The total amount of money you are paid for working. (p. 109)
- * **guide** Something that provides information. (p. 321)
- * **guidelines** Rules for doing things. (p. 75)
- H**
- HACCP** Hazard Analysis Critical Control Point; the system used to keep food safe from the kitchen to the table. (p. 31)
- hair restraint** Any barrier that holds back head or facial hair to keep it from contaminating food. (p. 26)
- * **hallmark** Distinguishing feature. (p. 330)
- hand sanitizer** A special liquid that kills bacteria on your skin; it is often used without water. (p. 27)
- hand service** Bringing dishes to the table without using a tray. (p. 131)
- hand tools** Handheld items used to cook, serve, and prepare food. (p. 262)
- hard lean dough** A basic yeast dough often made solely from flour, water, salt, and yeast. (p. 708)
- hard wheat flour** Flour that comes from kernels that are firm, tough, and difficult to cut. (p. 688)
- hash** Chopped meat that is mixed with potatoes and onions, and then browned. (p. 432)
- hash browns** Potatoes that are shredded and may include onions and seasonings. (p. 443)
- * **hasten** Speed up. (p. 647)
- hazard** A source of danger. (p. 14)
- heat lamp** A lamp that uses light in the infrared spectrum to keep food warm during holding. (p. 384)
- heat transfer** A measure of how efficiently heat passes from one object to another. (p. 262)
- heat treated** Glass that is heated and then cooled rapidly. (p. 155)
- Heimlich maneuver** A series of thrusts to the abdomen that can help dislodge something that is stuck in a person's airway. (p. 11)
- herb** A plant that grows in temperate climates; used as flavoring that adds color and aroma to foods. (p. 406)
- high-fat cake** A cake that generally uses baking powder as its leavening agent. (p. 755)
- high-heat cooking** Cooking methods such as broiling and grilling used for tender cuts of meat like tenderloins and strip steaks. (p. 605)
- highlighting** Emphasizing a particular menu item. (p. 128)
- high-ratio layer cake** A cake that contains a high ratio of both liquids and sugar, giving the cake a very moist and tender texture. (p. 758)
- holding** The process of keeping foods warm or cold before serving them. (p. 42)
- hollandaise (,hä-lən-'dāz)** A sauce made from lemon juice, butter, and eggs. (p. 517)
- home fries** French fries that are usually diced or sliced, served during breakfast. (p. 443)
- hominy** Corn product made by soaking dried corn in lye so that the kernels become swollen. (p. 627)
- honesty** When you are truthful and loyal in your words and actions. (p. 89)
- hors d'oeuvre (ör-'därv)** A very small portion of food served before a meal. (p. 148)
- hors d'oeuvre variés** A combination of plated items with enough hors d'oeuvres for one person. (p. 477)
- hospitality industry** Provides food and lodging to customers. (p. 68)

- host** The employee who greets the customers by smiling warmly and welcoming them. (p. 116)
- human resources** Managing staff. (p. 172)
- hummus ('hə-məs)** A Middle Eastern dish made from mashed chickpeas, lemon juice, garlic, and tahini. (p. 478)
- hydrogenation (hī-drä-jə-'nā-shən)** A process in which hydrogen is added under pressure to polyunsaturated fats, such as soybean oil, and changes liquid oil into a solid fat. (p. 282)
- hygiene** Using good grooming habits to maintain health. (p. 26)

I

- * **ideal** Perfect. (p. 38)
- * **impact** To have a direct effect upon. (p. 293)
- * **implement** To put into practice. (p. 350)
- * **imprecise** Inexact. (p. 678)
- * **improved** Made better. (p. 31)
- in season** During a fruit's or vegetable's main growing season. (p. 638)
- income** The money that comes into a business. (p. 174)
- incomplete protein** A protein source that does not provide all of the amino acids. (p. 281)
- independent restaurant** Has one or more owners and is not part of a national business. (p. 75)
- * **indicate** To show. (p. 572)
- * **indication** A sign. (p. 421)
- indirect labor cost** An operation's costs for employee health insurance, taxes, and vacations. (p. 173)
- induction** A heating source that uses electricity to heat cookware by magnetic energy generated by coils under the stovetop. (p. 234)
- infuse** To extract a substance's flavors by placing it in a hot liquid. (p. 124)
- ingredient list** In a recipe, includes all ingredients that will be used in the dish. (p. 333)
- inhibitor (in-'hi-bə-tər)** A substance that slows down the chemical breakdown of food. (p. 358)
- initiative (i-'ni-shə-tiv)** The energy required to begin new tasks and see them through. (p. 105)
- inspection** A test of a business's practices against standards. (p. 198)
- insurance** A contract between a business and an insurance company. It provides financial protection against losses. (p. 78)
- * **interact** To talk and work together. (p. 119)
- internship** A program in which an advanced student works at a business to get hands-on training. (p. 66)
- interstate commerce** Business that happens over two or more states. (p. 205)

- * **invaluable** Very helpful. (p. 682)
- inventory** The amount of supplies a business has on hand. (p. 175)
- invoice** A bill from a supplier for providing goods or services. (p. 225)
- IQF (individually quick frozen)** Fish or shellfish that have been quickly frozen piece by piece. Because the freezing happens so fast, few ice crystals form. (p. 553)
- irradiated (i-'rā-dē-'āt-ed) food** Food that has been exposed to radiation to kill harmful bacteria. (p. 199)
- island** A kitchen counter or equipment arrangement that can be approached from all sides. (p. 221)
- issuing** The process of delivering foods from storage to the kitchen as needed for use. (p. 357)
- Italian meringue (mə-'raŋ)** Meringue that is made with a boiling sugar syrup instead of granular sugar. (p. 762)

J

- job application** A form that employers use to collect personal information and previous work experience from job applicants. (p. 96)
- job description** A list of specific duties and skills needed for a job. (p. 179)
- job interview** A formal meeting between you and your potential employer. (p. 97)
- job lead** Possible employment opportunity. (p. 96)
- job portfolio** A collection of papers and samples that can be given to a potential employer. (p. 96)
- job rotation** A system by which employees are rotated through a series of jobs, allowing them to learn a variety of skills. (p. 66)
- julienne (jü-lē-'en)** 1/8-inch thick matchstick-shaped cuts. (p. 259)

K

- kaiser ('kī-zər) roll** A round, crusty roll. (p. 489)
- kale** A cabbage with curly green or multicolored leaves. (p. 465)
- * **keep** To stay fresh. (p. 547)
- ketchup** A tomato-based sauce used throughout the world as a flavoring. (p. 416)
- keyword** A word that makes it easier for employers to search for important information. (p. 98)
- kind** Species. (p. 570)
- kitchen brigade** A kitchen system where specific tasks are assigned to each member of the kitchen staff. (p. 59)
- kitchen manager** Orders ingredients and makes sure that they are prepared correctly. (p. 60)
- kneading** Working a dough by hand or in a bench mixer with a dough hook to develop gluten and evenly distribute ingredients. (p. 700)

L

- * **labor** Hard work. (p. 619)
- labor union** An organization of workers in a similar field. (p. 106)
- laceration** (**ˌla-sə-ˈrā-shən**) A cut or tear in the skin that can be quite deep. (p. 11)
- lacto-ovo-vegetarian** (**ˌve-jə-ˈter-ē-ən**) Someone who eats both dairy products (lacto) and eggs (ovo). (p. 293)
- lacto-vegetarian** Someone who eats or drinks some dairy products, such as cheese and milk, but does not eat eggs. (p. 293)
- lamb** Meat that comes from sheep that are less than one year old. (p. 597)
- * **lapse** Problem due to inattention. (p. 171)
- larding** Inserting long, thin strips of fat or vegetables into the center of lean meat. (p. 588)
- latticework** A grid pattern on a pie crust made with individual strips of crust. (p. 765)
- law** An established rule. (p. 205)
- leach** To dissolve. (p. 298)
- leadership** The ability to motivate others to cooperate in doing a common task. (p. 90)
- lean fish** Fish with little fat. (p. 542)
- leavening agent** A substance that causes a baked good to rise by introducing carbon dioxide (CO₂) or other gases into the mixture. (p. 694)
- leavens** (**ˈle-vəns**) Causes dough to rise. (p. 706)
- legume** (**ˈle-gyüm**) The seeds and pods from certain plants. (p. 280); A plant that has double-seamed pods that contain a single row of seeds. (p. 660)
- * **lend** To adapt. (p. 403)
- * **lessen** To reduce. (p. 299)
- * **lesser** Lower. (p. 638)
- let down** A condition in which the ingredients in a dough completely break down. (p. 715)
- license** A written permission to participate in a business activity. (p. 78)
- light meat** Lighter colored wing and breast meat found on birds that rarely fly. (p. 571)
- line cooks/station cooks** Cooks that work the food production line. (p. 59)
- liner** An ingredient that adds visual interest and texture in a canapé. (p. 477)
- lipoprotein** (**ˌlī-pə-ˈprō-tēn**) A chemical package that circulates cholesterol through the bloodstream. (p. 282)
- lockout/tagout** OSHA procedure; all necessary switches on malfunctioning electrical equipment are tagged and locked from use. (p. 7)
- log** A written record of day-to-day activities and procedures. (p. 36)

loss prevention The steps a business takes to eliminate waste and theft. (p. 184)

lowboy A half-size refrigerator that fits under the counter in a work station. (p. 226)

low-fat cake A cake that is leavened from air that is whipped into the egg batter. (p. 755)

low-heat cooking The best method for preparing large cuts of meat, such as top round. (p. 605)

lug A box, crate, or basket in which produce is shipped to market. (p. 638)

* **luxury** Expensive and extravagant. (p. 549)

M

macrobiotics A diet that includes unprocessed foods and organically grown fruits and vegetables. (p. 293)

* **mainstay** Main part or support. (p. 443)

* **maintain** To keep. (p. 489)

make change To count back the correct amount of change to a customer from the money he or she has paid for a check. (p. 85)

* **mandatory** Required. (p. 549)

mandoline (**ˌman-də-ˈlīn**) A hand-operated machine used for slicing vegetables and fruits. (p. 653)

manual dishwashing Washing dishes, glasses, cookware, and utensils by hand. (p. 45)

marbling Fat within the muscle tissue. (p. 588)

marinade (**ˌmer-ə-ˈnād**) An acidic sauce usually used to soak meat before it is cooked, to give the meat flavor and tenderness. (p. 410)

marinara sauce Made by adding olive oil and spices to a basic tomato sauce. (p. 520)

marinated vegetable A vegetable that has been soaked in a liquid, typically made of vinegar, oil, herbs, and spices. (p. 481)

* **mark** To show. (p. 651)

market form The form poultry is in when it is purchased. (p. 571)

market segment A particular type of clientele. (p. 189)

marketing plan A specific plan to market a business, including advertising, public relations, and promotions. (p. 191)

marketplace The location, people, and atmosphere of a particular geographic area. (p. 188)

markup-on-cost method A common menu pricing formula. To find the selling price, take the food cost of an item and divide it by the desired food cost percent. (p. 322)

masa harina (**ˈmä-sə ä-ˈrē-nä**) A finely ground hominy used in tortillas and breads. (p. 627)

- mass marketing** Marketing to all possible segments at once. (p. 189)
- master work schedule** A schedule which shows the work shifts of all employees of a business. (p. 181)
- material safety data sheet** Identifies any hazardous chemicals and their components. (p. 201)
- maturity** A bird's age. (p. 571)
- mayonnaise** A permanent suspension of egg yolks, oil, and vinegar or lemon juice. (p. 490)
- meal-based menu** A menu that shows dishes available for a single meal. (p. 310)
- mealy dough** A pie dough in which the fat is blended into the flour more completely than it is for flaky dough. (p. 766)
- mealy potato** A potato with thick skin and starchy flesh. (p. 650)
- meat** The muscle of animals, such as cattle and hogs. (p. 588)
- * **mediocre** Average. (p. 517)
- medium** Meat that is browned on the surface with a thick outer layer of gray and a pink center. (p. 610)
- medium rare** Meat that is browned on the surface with a thicker outer layer of gray and a red to slightly pink center. (p. 610)
- medium well** Meat that is browned on the surface with a thick outer layer of gray and a center that is barely pink. (p. 610)
- mentor** An experienced employee who has a solid understanding of his or her job. (p. 180)
- menu** A listing of the food choices a restaurant offers for each meal. (p. 308)
- menu board** A handwritten or printed menu on a board on a wall or easel. (p. 318)
- meringue (mə-'ran)** Whipped egg whites. (p. 756)
- mesclun ('mes-klən)** A popular mix of baby leaves of lettuces and other more flavorful greens, such as arugula. (p. 466)
- metric system** A mathematical system that uses powers of 10 to measure things. (p. 335)
- microwave** An invisible wave of energy that causes water molecules to rub against each other and produce the heat that cooks food. (p. 234)
- minerals** An essential part of your bones and teeth; regulates body processes. (p. 286)
- minimum internal temperature** The lowest temperature at which foods can be safely cooked. (p. 33)
- minimum wage** The lowest hourly amount a worker can earn. (p. 106)
- mirepoix (mir-'pwä)** A mix of coarsely chopped vegetables that is used in a stock to add flavor, nutrients, and color. (p. 510)
- mise en place place (,mē-,zän-'pläs)** Assembly of all the necessary ingredients, equipment, tools, and serving pieces to prepare food. (p. 222)
- * **mode** Functioning arrangement. (p. 222)
- modern American plated service** Meal service in which the food is completely prepared, portioned, plated, and garnished in the kitchen. The servers carry the plated food from the kitchen and place the prepared dishes in front of the customer. (p. 144)
- modified starch** Also called waxy maize, a type of corn product used for fruit pies that will be frozen. (p. 767)
- modified straight-dough method** Method that breaks the straight-dough method into steps. (p. 713)
- moist baking** Adding vegetables and liquid to a large piece of fish or a whole fish. (p. 559)
- moist cooking technique** Uses liquid instead of oil to create the heat energy that is needed to cook the food. (p. 376)
- mold** A pan with a distinctive shape. (p. 686); A form of fungus. (p. 16)
- mollusk ('mä-ləks)** A shellfish with no internal skeletal structure. Instead, it has a shell that covers its soft body. (p. 550)
- monosodium glutamate** A flavor enhancer. MSG comes from seaweed. It intensifies the natural flavor of most of the foods it is added to. (p. 403)
- monounsaturated (,mä-nō-,ən-'sa-chə-,rā-təd) fat** A fat that is liquid at room temperature and does not raise cholesterol levels. (p. 283)
- Monte Cristo** A closed, shallow-fried or deep-fried sandwich. (p. 497)
- mother sauces** The five basic sauces: béchamel, sauce espagnole, tomato, velouté, and hollandaise. (p. 519)
- mousse ('müs)** A light and airy dessert made with both meringue and whipped cream to enhance the lightness. (p. 774)
- muffin** A quick bread made with egg and baked in a cupcake mold. (p. 445)
- muscle fibers** Fiber in meat that determines the meat's texture and contribute to its flavor. (p. 588)
- musculoskeletal (,mäs-kyə-lō-'ske-lə-təl) disorder** Workplace injury caused by repeated trauma to muscles or bones. (p. 207)
- * **muted** Soft. (p. 480)
- mutton** Meat from sheep older than 1 year. (p. 597)

N

- * **nature** Basic structure. (p. 100)
- net pay** The amount of money you actually receive after deductions. (p. 109)
- net weight** The weight of the contents of a can. (p. 652)

networking Making use of all of your personal connections to reach your career goals. (p. 94)

noncommercial operation An operation that works to pay for daily expenses. (p. 70)

nonedible A nonfood product. (p. 358)

nonperishable Items that will not spoil quickly when stored correctly. (p. 152)

* **notable** Well known. (p. 709)

* **note** To make a record of. (p. 225)

nourishing element Provides flavor, nutrients, and color to stocks; composed of fresh bones, meat trimmings, fish trimmings, or vegetable trimmings. (p. 510)

nut A hard-shelled dry fruit or seed. (p. 419)

nutrient A chemical compound that helps the body carry out its functions. (p. 280)

nutrient-dense food A food that is low in calories, but rich in nutrients. (p. 291)

nutrition label Information found on food giving serving size, calories, and nutrients. (p. 290)

O

oat berries Berries that do not have the outer layer removed, so they are a whole grain, with all the texture and nutrients found in other whole grains. Also called groats. (p. 627)

oats The berries of oat grass. (p. 627)

* **objective** Goal. (p. 127)

* **obtain** To get. (p. 499)

* **obvious** Easily spotted. (p. 179)

occupational back support A type of back brace with suspenders designed to support the lower back while lifting. (p. 4)

* **offset** To compensate for. (p. 116)

off-site catering A caterer prepares and delivers food from a central kitchen to different locations. (p. 71)

oil A fat that is extracted from plants such as soybeans, corn, peanuts, and cottonseed. (p. 690)

omelet ('äm-lät) An egg specialty dish made of beaten eggs that are cooked without stirring. Once the eggs are set, they are folded in half in the pan. (p. 437)

one-stage method A cookie mixing method in which all ingredients are mixed in a single stage. (p. 749)

on-site catering Food is prepared at a customer's location for special occasions. (p. 71)

* **opaque** Light-blocking. (p. 410)

open-ended question A question that requires more than a one- or two-word answer. (p. 179)

open-market buying Getting price quotes for identical items from several vendors. (p. 359)

open-spit roasting To roast food over an open fire. (p. 383)

operating cost Anything that is a cost of doing business. (p. 321)

* **option** Choice. (p. 625)

orientation A training session that is held for new employees to help them better understand the business. (p. 172)

* **outline** To describe in a basic way. (p. 105)

oven spring Final leavening effort, occurring before internal temperatures become hot enough to kill the yeast cells. (p. 722)

overhead cost Expenses other than food and wages. (p. 75)

overstaffing Scheduling too many people to work on a given shift. (p. 171)

ovo-vegetarian Someone who eats eggs in addition to foods from plant sources. (p. 293)

P

packing medium A liquid used in canned goods to protect the food product. (p. 652)

paella (pä-'ā-yə) A Spanish rice dish with meat or shellfish. (p. 414)

pan loaf Bread loaves that are rolled and placed, seam down, into prepared loaf pans. (p. 718)

pan-fry To cook by heating a moderate amount of fat in a pan before adding food. (p. 384)

pan Placing dough in the correct type of pan. (p. 718)

parasite ('pä-r-ə-sīt) An organism that must live in or on a host to survive. (p. 16)

parboiled rice Also called converted rice; rice that has been partially cooked with steam and then dried. (p. 625)

parboiling Foods are put into boiling water and partially cooked. The cooking time for parboiling foods is longer than for blanching. (p. 390)

pare To trim off. (p. 254)

parfait (pä-'fās) A frozen dessert flavored with heavy cream. (p. 774)

parstock The amount of stock that will cover a facility's needs from one delivery to the next. (p. 362)

partnership A legal association of two or more people who share the ownership of the business. (p. 77)

pasta A starchy food product that is made from grains. (p. 616)

pasteurize ('pas-chə-rīz) To heat a product at high enough temperatures to kill harmful bacteria. (p. 40)

- pasteurized** Food that is heated at very high temperatures for a short time to destroy bacteria. (p. 434)
- pastrami (pə-'strä-mē)** A seasoned smoked meat. (p. 499)
- pastries** Also known as Danishes, made from yeasted, sweetened dough with butter. (p. 444)
- pastry chef** Responsible for making baked items, such as breads, desserts, and pastries. (p. 59)
- pastry flour** Flour that has a protein content between bread and cake flour. (p. 688)
- pathogens** Disease-causing microorganisms. (p. 14)
- patronage ('pa-trə-nij)** Spending money at a business. (p. 119)
- peel** A wooden board that a baker uses to slide breads onto the oven floor or hearth. (p. 706)
- percentage** A rate or proportion of 100. (p. 680)
- * **perception** Awareness. (p. 422)
- * **performance** The way a foodservice business operates. (p. 198)
- periodic-ordering method** A purchaser decides how much product will be used in a given time period. The purchaser then reviews the amount of product that is on hand, what will be needed, and how much parstock of the product is needed. (p. 363)
- perishable ('per-i-shə-bəl)** Products that can spoil quickly, especially if they are not stored properly. (p. 41)
- * **perpendicular (,pər'pən-'di-kyə-lər)** Standing at right angles. (p. 156)
- perpetual inventory** A continuously updated record of what a business has on hand for each item. (p. 362)
- pesto (pes-(,)tō)** A sauce made with olive oil, pine nuts or walnuts, parmesan, and fresh basil, garlic, salt, and pepper. (p. 490)
- phyllo ('fē-(,)lō)** A very thin, layered pastry dough. (p. 489)
- physical inventory** A list of everything that an operation has on hand at one time. (p. 362)
- phytochemicals (,fī-tō-'ke-mi-kəls)** Natural chemicals such as those found in plants, fruits, vegetables, grains, and dry beans. (p. 295)
- pigment** The matter in cells and tissue that gives them their color. (p. 378)
- pilaf method** Sautéing a grain in oil or butter before adding liquid. (p. 630)
- pilot light** A continuously burning flame that lights the burner when you turn on the range. (p. 239)
- pita ('pē-tə)** A round-shaped bread cut open to form a pocket. (p. 489)
- pith** White membrane of a fruit. (p. 402)
- plate composition** The way in which foods are arranged on a plate. (p. 425)
- platform scale** A scale with a platform to hold large or heavy items to be weighed. (p. 225)
- plating** The arrangement of food items and garnishes on a plate. (p. 314)
- poach** To cook food in a flavorful liquid between 150°F (66°C) and 185°F (85°C). (p. 391)
- point-of-sale system** A system involving a computer that has either a number or a button code for each item on the menu that sends the order to the kitchen. (p. 130)
- polenta (pō-'len'tə)** Corn product made from cornmeal that is gradually sprinkled into simmering water or stock and cooked until it becomes a thick paste. (p. 627)
- polyunsaturated (,pä-lē-,ən-'sa-chə-,rā-təd) fat** A fat that is liquid at room temperature. (p. 285)
- pork** The meat from hogs that are less than one year old. (p. 595)
- porous ('pör-əs)** For eggs, flavors and odors can be absorbed through the shell. (p. 433)
- * **portion** Part. (p. 595)
- portion scale** A scale that weighs portions. (p. 225)
- portion size** The amount or size of an individual serving. (p. 331)
- positioning** The way a foodservice business presents itself to the community. (p. 191)
- positive reinforcement** Praising an employee when a job or task is done correctly. (p. 180)
- potency** Strength. (p. 740)
- poultry** Birds that are raised for human consumption. (p. 570)
- pound cake** A cake that contains a pound each of butter, flour, sugar, and eggs. (p. 755)
- pour batter** Batter thin enough to be poured from the mixing bowl. (p. 731)
- * **precise** Exact. (p. 335)
- preferment** The process of removing a portion of the dough. It is kept dormant for 8 to 24 hours and then added to the next day's bread products. (p. 713)
- prep cook** Prepares ingredients to be used on the food production line. (p. 59)
- preparation procedure** The steps you must take to prepare a dish. (p. 331)
- prepared mustard** Mustard that contains a combination of ingredients including ground white, black, and brown mustard seeds, vinegar, salt, and spices. (p. 416)
- preprocessed legumes** Legumes that have already been soaked. (p. 660)
- preset** To set items on the table before food is served. (p. 133)
- preset menu** A meal served to a group of customers who have decided in advance on the menu and the time of service. (p. 158)

- pressure-frying** Cooking foods more quickly and at lower temperatures. (p. 580)
- primal cut** Sometimes called wholesale cuts, large, primary pieces of meat separated from the animal. (p. 589)
- * **principle** Rule. (p. 580)
- printed menu** Any form of printed menu list that is handed to customers as soon as they sit down. (p. 318)
- prioritize** Put things in order of importance. (p. 91)
- prix fixe ('prē-'fēks) menu** Offers a complete meal for a set price. With a prix fixe menu, the customer chooses one selection from each course offered. (p. 310)
- probation (prō-'bā-shən)** A short period of time when you first start work that gives your employer a chance to monitor your job performance closely. (p. 107)
- * **process** Series of actions. (p. 298, 577)
- processed cheese** A combination of ripened and unripened cheese pasteurized with flavorings and emulsifiers and poured into molds. (p. 474)
- processing** Preparing and cleaning food so that it can be eaten (p. 40); the act of changing meat by artificial means. (p. 597)
- produce** Fresh fruits and vegetables. (p. 41)
- product name** A name given to a recipe. (p. 331)
- product yield** The amount of food product left after preparation. (p. 350)
- profit** The money a business makes after paying all of its expenses. (p. 70)
- profit and loss statement** A financial statement that shows exactly how money flows in a business. Also called an income statement. (p. 175)
- * **promote** Advertise. (p. 142)
- promotion** A specific effort to market a particular item or special. (p. 191)
- proofing** Final fermentation stage that allows the leavening action of yeast to achieve its final strength before yeast cells are killed by hot oven temperatures. (p. 719)
- proofing/holding cabinet** Also called a proofer, a freestanding metal box on wheels that is temperature- and humidity-controlled. (p. 242)
- proportion** The ratio of one food to another and to the plate. (p. 315)
- * **proportional** About the same size. (p. 502)
- prosciutto (prō-'shü-(,)tō)** Italian for ham; dry-cured, uncooked ham, usually served in thin slices. (p. 479)
- protective clothing** Clothing that is worn to help lower the chances of food contamination. (p. 26)
- protein** A nutrient that builds, maintains, and repairs body tissues. (p. 281)
- * **provide** To make available. (p. 26)
- psychological pricing method** Menu pricing based on how a customer reacts to menu prices. (p. 323)
- public relations** Publicity and advertising that a foodservice operation uses to enhance its image. (p. 191)
- publicity** The free or low-cost efforts of a facility to improve its image. (p. 191)
- pudding** A dessert made from milk, sugar, eggs, flavorings, and cornstarch or cream for thickening. (p. 771)
- PUFI mark** Packed Under Federal Inspection; an inspection mark for fish and shellfish. (p. 549)
- Pullman loaf** A rectangular-shaped sandwich bread loaf with a flat top and an even texture. (p. 488)
- pulse** A seed of a legume that is dried. (p. 660)
- punch** The action of turning the sides of the dough into the middle and turning the dough over. (p. 716)
- puncture wound** An injury in which the skin is pierced with a pointed object, such as an ice pick, making a deep hole in the skin. (p. 11)
- purchase order** A document asking a supplier to ship supplies at a predetermined price. (p. 225)
- purchaser** Buys food and supplies according to his or her restaurant clients' current needs. (p. 61)
- purée** A food in which one or more of the ingredients have been ground in a food processor. (p. 300)

Q

- Q factor** Questionable ingredient factor; the cost of an ingredient that is difficult to measure. (p. 353)
- * **qualities** Distinguishing characteristics. (p. 88)
- quality control** A system that ensures that everything will meet the foodservice establishment's standards. (p. 330)
- * **quantity** Amount. (p. 225)
- quantity** The total amount a recipe makes. (p. 330)
- quenelle (kə-nel)** A purée of chopped food formed into shapes, used as a garnish. (p. 459)
- quiche ('kēsh)** A pie crust filled with a mixture of eggs, cream, cheese, and vegetables or meat. (p. 439)
- quick breads** A type of bread made from quick-acting leavening agents such as baking powder. (p. 445)
- quick soak** To soak beans by placing in a pot and covering with water. Bring the water to a boil for a few minutes, then turn off heat, cover, and let sit for one hour. (p. 663)
- quick-service restaurant** A restaurant that quickly provides a limited selection of food at low prices. (p. 70)

R

- radiation** Heats food by transmitting heat energy through air waves. (p. 234)
- radicchio (ra-'di-kē-ō)** A cabbage-like plant with a slightly bitter, red leaf. (p. 466)
- raft** A floating mass that forms from the mixture of meat and eggs in a soup or consommé. The raft traps the impurities that rise to the top of the broth. (p. 528)
- ramekin ('ra-mi-kən)** A small individual baking dish. (p. 440)
- range of motion** Using the fewest body movements without unnecessary stress or strain. (p. 223)
- rare** Meat that is browned on the surface, with a red center. (p. 610)
- raw vegan ('vē-gən)** Someone who eats only unprocessed vegan foods that have not been heated above 115°F (46°C). (p. 293)
- ready-made bread** Bread made in advance and delivered to restaurants. (p. 443)
- ready-to-cook** Food that has been prepared and packaged. (p. 571)
- receiving** Accepting deliveries of food and supplies. (p. 38)
- receiving record** A numbered record of everything received during a particular day. (p. 225)
- receptors** Cells that receive stimuli. (p. 421)
- recipe** An exact set of directions on how to use ingredients, equipment, and cooking techniques for a certain dish. (p. 330)
- recipe conversion** A change in a recipe to produce a new amount or yield. (p. 337)
- Recommended Dietary Allowances** The amount of each essential nutrient that will meet the nutritional needs of the majority of healthy Americans for a day. (p. 289)
- recondition** To coat a griddle or skillet in oil so that foods will not stick to it. (p. 239)
- record-keeping system** A system of flow charts, policy and procedure manuals, written descriptions, and food temperature readings taken at different times. (p. 35)
- recovery time** The time it takes for the fat or oil to return to the preset temperature after food has been submerged. (p. 386)
- recycle** To take a product at the end of its use and turn it into a raw material to make a different product. (p. 44)
- reduce** To decrease the volume of. (p. 391)
- reduction** The process of evaporating part of a stock's water through simmering or boiling. (p. 513)
- reel oven** An oven with shelves that move or rotate like a Ferris wheel to bake a quantity of similar items evenly. (p. 684)
- *refer** Reread briefly. (p. 231)
- *reflects** Shows. (p. 531)
- *regulate** Control. (p. 285)
- regulation** A rule by which government agencies enforce minimum standards of quality. (p. 198)
- rehydrate ((,)rē-'hī-,drāt)** To add water into. (p. 642)
- reliable (ri-,lī-ə-'bəl)** When other people can count on you to do what you say you will do. (p. 89)
- relish tray** An attractive arrangement of raw, blanched, or marinated vegetables. (p. 481)
- relish** Coarsely chopped or ground pickled items. (p. 416)
- render** To melt. (p. 577)
- repetitive stress injury** An injury that can happen to employees who must perform the same motions over and over. (p. 106)
- *replenish** Restock. (p. 242)
- reputation** The overall quality or character of a person or business. (p. 116)
- requisition** An internal invoice that allows management to track the physical movement of inventory through a business. (p. 363)
- research chef** Works closely with food scientists to produce new food products. (p. 60)
- reservation** An arrangement to have a table held for a customer at a specific time. (p. 116)
- *reserve** Keep. (p. 513)
- *resist** To avoid. (p. 597)
- resource** The raw material with which you do your work. (p. 91)
- responsibility** Your ability to be aware of what a particular situation demands of you. (p. 88)
- rest** To allow cooked meat to sit so that juices redistribute throughout the meat. (p. 607)
- restaurant manager** Oversees the operation of the entire restaurant. (p. 60)
- *result** Have an outcome. (p. 14)
- résumé ('re-zə-,mā)** A summary of your career objectives, work experience, job qualifications, education, and training. (p. 96)
- *reveal** To make known. (p. 591)
- rice** The starchy seeds of a cereal grass. (p. 624)
- rind** The outer surface of cheese. (p. 472)
- ring** A type of container that has no bottom. (p. 686)
- ripe** Fully grown and ready to eat. (p. 638)
- ripening** Process by which healthful bacteria and mold change the texture and flavor of cheese. (p. 471)
- risk management** Taking steps to prevent accidents from happening. (p. 185)
- risotto** A rice dish in which the grain has been sautéed in butter, and then simmered in a flavored cooking liquid, which has been added gradually to the rice until it has finished cooking. (p. 624)

- risotto method** A method in which the grain is sautéed, and then a small amount of hot liquid, often a soup stock, is added. The grain is stirred until most of the liquid is absorbed. This process of adding liquid and stirring the grain is continued until the grain is completely cooked. (p. 631)
- risotto Milanese (ri-'sò-(,)tō ,mi-lə-'nəz)** An Italian dish that includes rice that is sautéed in butter before stock is added. (p. 414)
- rivet** A metal piece that fastens the tang to the knife handle. (p. 252)
- roasting** Cooking method that uses dry heat in a closed environment. Foods are placed on top of a rack that is inside a pan. This allows air to circulate all the way around the food. In general, roasting involves longer cooking times than baking. (p. 383)
- * **role** Function performed. (p. 282)
- roll cut** Cutting a cylindrical fruit or vegetable as for a diagonal cut, rolling the fruit or vegetable by 180 degrees, and then doing another diagonal cut. (p. 255)
- rolled-in fat yeast dough** A dough made of many thin, alternating layers of fat and dough. (p. 709)
- rondelle (rän-'del)** A disk-shaped slice. (p. 255)
- room service** Having servers bring specially ordered meals to a customer's room. (p. 144)
- rotate stock** To place stored items in an orderly way so that older items are used first. (p. 363)
- round fish** Fish that have a backbone on the upper edge of their bodies. They have an eye on each side of their heads, and they swim vertically. (p. 542)
- rounded** Dough shaped into smooth balls. (p. 717)
- * **routine** Regular set of actions. (p. 4)
- roux (rü)** A cooked mixture made from equal parts of fat and flour by weight used to thicken sauces. (p. 520)
- rumaki (rə-'mä-kē)** Appetizers that consist of blanched bacon wrapped around vegetables, seafood, chicken liver, meat, poultry, or fruits. (p. 503)
- Russian/English service** Each course is completely prepared, cooked, portioned, and garnished in the kitchen and then placed on a service plate or platters. Each customer is served a portion of the product from large platters. (p. 147)
-
- S**
- sachet (sa-'shā)** French for bag; used for herbs and spices. (p. 410)
- salad** A mixture of one or several ingredients with a dressing. (p. 463)
- salad sandwich** A sandwich that has a salad with a fatty dressing as the filling. (p. 499)
- sales cycle** The period between supply deliveries. (p. 358)
- sales representative** Helps chefs to select food and equipment that will best fit their needs and budgets. (p. 61)
- salsa ('sól-sə)** A fresh or cooked mixture of chiles, tomatoes, onions, and cilantro. (p. 416)
- sanitary** Clean. (p. 14)
- sanitation** Healthy or clean and whole. (p. 14)
- sanitizing ('sa-nə-,tīz-ɪŋ)** Reducing the number of microorganisms on the surface. (p. 18)
- * **satisfy** To fill. (p. 605)
- saturated ('sa-chə-,rāt-əd) fat** A fat that tends to increase the amount of cholesterol in the blood and is solid at room temperature. (p. 283)
- sauce** A flavored, thickened liquid. It is usually formed by adding seasonings, flavorings, and a thickening agent to stock. (p. 517)
- sauce espagnole (,es-pan-'yól)** Made from brown stock and tomato product; one of the mother sauces. (p. 519)
- sauerkraut ('sau(-ə)r-,kraüt)** Finely sliced cabbage that has been fermented in brine. (p. 491)
- sausage** A breakfast meat often made of ground pork that has been seasoned and stuffed into casings; also available as patties. (p. 432)
- sautéing (só-'tā-ɪŋ)** A quick, dry cooking technique that uses a small amount of fat or oil in a shallow pan. (p. 384)
- savory ('sā-və-rē)** Stimulating and full of flavor; sometimes included in the basic tastes. (p. 422)
- scaling** How bakers refer to weighing. (p. 679)
- scone** A type of quick bread similar to biscuits that is often cut into triangle shapes. (p. 445)
- scoop** Also called a disher, a tool to control portions during food preparation and serving. (p. 349)
- scorch** To burn with too intense of a heat. (p. 469)
- score** Make ridges in a diamond-shaped pattern with a fork. (p. 461)
- seams** The places where edges of the dough meet. (p. 718)
- sear** To quickly brown food at the start of the cooking process. (p. 383)
- season** Sealing the surface of a pan with a layer of baked-on oil to prevent sticking. (p. 438)
- seasoning** An ingredient that enhances food without changing the natural flavor. (p. 400)
- section/station** A group of tables that comprises a service staff member's responsibility. (p. 117)
- seed** A plant grain. (p. 419)
- semi-à la carte menu** A menu with the appetizers and desserts priced separately. (p. 310)
- semiperishable** Perishable items that contain an inhibitor. (p. 358)
- semolina (,se-mə-'lē-nə) flour** A hard-grain wheat flour that is high in the proteins that form gluten. (p. 616)

- sensory evaluation** The systematic tasting of food by consumers and foodservice professionals. (p. 424)
- sensory perception** How a person's eyes, nose, ears, mouth, and skin detect and evaluate the environment. (p. 421)
- sensory properties** Properties that affect how people perceive something. The sensory properties of food are color and appearance, flavor, and texture. (p. 421)
- * **separation** Dividing. (p. 734)
- serrated (sə-¹rāt-ed)** Toothed like a saw. (p. 254)
- server** The service staff member who has the most contact with the customers. (p. 117)
- service station** An area where supplies are kept for the service staff to reset tables between customers. (p. 118)
- serviette** A napkin-lined plate used to carry flatware. (p. 155)
- sexual harassment** Unwelcome advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature. (p. 206)
- shape** To form dough into the distinctive shapes associated with yeast products. (p. 718)
- sheet pan** A shallow, rectangular pan that comes in full, half, and quarter sizes. (p. 686)
- sheeter** A piece of equipment that rolls out large pieces of dough to a desired thickness. (p. 681)
- shelf life** The period of time a product can be stored and still be good to use. (p. 38)
- sherbet** Frozen dessert that combines fruit juices, sugar, water, and a small amount of cream or milk. (p. 771)
- shirred ('shərd)** Eggs covered with cream or milk and sometimes bread crumbs. Usually prepared in ramekins lined with a variety of ingredients. (p. 440)
- shock** A serious medical condition in which not enough oxygen reaches tissues. (p. 11)
- shocking** Plunging food into ice water after blanching. (p. 390)
- shortening** In baking, solid fats. (p. 689)
- shrinkage** The percentage of food lost during its storage and preparation. (p. 341)
- shucked** Removed from the shell. (p. 39)
- side order** An order of food in addition to what is served as the main dish. (p. 446)
- side work** Duties that service staff members have to perform before the dining room is open to customers. (p. 151)
- sifting** Passing dry ingredients through a wire mesh to remove lumps, blend, and add air. (p. 700)
- simmering** Food cooks slowly and steadily in a slightly cooler than boiling liquid. (p. 391)
- simple syrup** A syrup made of sugar dissolved into hot water. (p. 762)
- single-food hors d'oeuvre** An hors d'oeuvre that consists of one food item. (p. 477)
- single-source buying** Purchasing most products from a single vendor. (p. 359)
- slash** Making shallow cuts in the surface of an item just before baking. (p. 721)
- sleeper** A lobster in the process of dying. (p. 553)
- * **slightly** A little bit. (p. 766)
- smallwares** Hand tools, pots, and pans used for cooking. (p. 262)
- smoking** A form of cooking using low heat, long cooking times, and wood smoke for flavor. (p. 382)
- smoking point** The temperature at which an oil will smoke in a pan. (p. 300, 580)
- soft cookie** A cookie that has low amounts of fat and sugar in the batter, and a high proportion of liquid, such as eggs. (p. 748)
- soft medium dough** A dough that produces items with a soft crumb and crust. (p. 709)
- soft wheat flour** Flour that comes from a soft wheat kernel. (p. 688)
- solanine** A toxic substance found in green potatoes that can upset your stomach and interfere with nerve transmission. (p. 650)
- sole proprietorship** A business that has only one owner. (p. 77)
- solid waste** Packaging material, containers, and recyclables. (p. 200)
- sorbet (sór-¹bā)** The product left when the milk or cream is omitted from sherbet. (p. 771)
- soufflé (sü-¹flā)** A puffed egg dish that is baked in the oven. (p. 434)
- soup plate** A shallow bowl-shaped plate. (p. 622)
- sous ('sü) chef** Supervises and sometime assists other chefs in the kitchen. (p. 59)
- specialty soup** A soup that highlights a specific region, or reflects, or shows, the use of special ingredients or techniques. (p. 531)
- specification** A written description of the products a foodservice operation needs to purchase. (p. 348)
- spice** A flavoring that blends with the natural flavor of foods. (p. 401)
- spice rub** A mixture of ground spices that is rubbed on raw food before it is cooked. (p. 607)
- spinach** Dark green, leafy vegetable that is full of calcium and adds color and flavor to salads. (p. 464)
- spoken menu** A server states what foods are available and the prices of each. (p. 318)
- sponge cake** Also called a foam cake, has an airy, light texture because of large amounts of air whipped into the eggs. (p. 756)
- sponge method** Dough preparation method that allows the yeast to develop separately before it is mixed with the other ingredients. (p. 713)
- spread** Expand. (p. 748)

- springform pan** A pan with a clamp used to release the pan's bottom from its wall. (p. 686)
- * **stabilize** Support. (p. 755)
- stack oven** Also called a deck oven; a freestanding rectangular oven with a series of well-insulated compartments stacked on top of one another. (p. 682)
- stainless steel** A hard, durable metal made of chromium and carbon steel. (p. 252)
- staling** The process by which moisture is lost, causing a change in the texture and aroma of food. (p. 689)
- standard** An established model or example used to compare quality. (p. 198)
- standardized accounting practices** Reporting figures in a way that can be easily compared to the figures from other businesses. (p. 173)
- standardized ('stan-dər-'dīzd) recipe** A set of written instructions used to consistently prepare a known quantity and quality of food. (p. 330)
- starter** A mixture of flour, yeast, sugar, and a warm liquid that begins the leavening action. (p. 706)
- steak sauce** A tomato-based sauce that is tangier than ketchup. (p. 416)
- steam table** A food warmer; keeps prepared foods warm in serving lines. (p. 242)
- steaming** Cooking vegetables or other foods in a closed environment filled with steam. (p. 391)
- stewing** A combination cooking technique. Stewed foods are cut into small pieces, and completely covered with liquid during cooking. Cooking time for stewing is generally shorter than for braising. (p. 394)
- stimuli** Things that cause an activity or response. (p. 421)
- stir-frying** A dry cooking technique similar to sautéing done with a wok. (p. 384)
- stirred custard** A custard made on the range in a double boiler or saucepan. (p. 772)
- stir** Gently blending ingredients until they are combined. (p. 700)
- stock** The liquid that forms the foundation of sauces and soups. (p. 510)
- storage** Placing food in a location for later use. (p. 38)
- straight-dough method** Mixing all the ingredients together in a single step. (p. 713)
- * **strategy** A plan of action. (p. 189)
- streusel ('strü-səl)** A sweet, crumbly topping made of flour, brown sugar, and granulated sugar. (p. 741)
- stuffing** Seasoned food mixture often made with bread. (p. 582)
- * **subject** To expose to. (p. 378)
- * **submerged** Covered in liquid. (p. 389)
- * **substituted** Switched. (p. 774)
- * **subtle** Understated; delicate. (p. 466)
- * **sufficient** Enough. (p. 562)
- * **suitable** Having the right qualifications. (p. 97)
- sundae** A dessert with one or more scoops of ice cream topped with garnishes, fruits, or syrups. (p. 774)
- * **supplement** Addition. (p. 510)
- surimi** A combination of white fish and flavoring, minced and formed into shapes. (p. 557)
- * **surround** Enclose. (p. 689)
- sushi ('sü-shē)** A Japanese dish of raw or cooked fresh fish or seafood wrapped in cooked and cooled rice. (p. 559)
- sweating** Cooking vegetables in fat over low heat in a process that allows them to release moisture. (p. 528)
- Swedish meatball** Made with ground beef or pork, onions, and served with a gravy. (p. 503)
- sweet rich dough** A soft, heavy dough that incorporates up to 25% of both fat and sugar. (p. 709)
- Swiss meringue** A meringue that is made by dissolving sugar and egg whites together over simmering water, and then beating them. (p. 762)

T

- table d'hôte (,tä-bəl-'dōt) menu** A menu that lists complete meals, from appetizers to desserts and sometimes beverages, for one set price. (p. 310)
- table setting** The specific arrangement of tableware, glassware, and flatware for a meal. (p. 156)
- table tent** Folded cards that stand on the table to list specials. (p. 318)
- tableside** At the table, in full view of the customer. (p. 146)
- tableware** Any kind of dish, from dinner plates to soup bowls to coffee cups. (p. 155)
- tang** The part of the blade that continues into the knife's handle. (p. 252)
- tank system** A system where two plastic lines are connected to each carbon dioxide tank in a soft drink machine. One leads to the CO₂ tank and allows it to pressurize the soda syrup. The other line permits the soda to pass to the dispensing gun. (p. 122)
- target market** The market segment you most want to attract. (p. 189)
- tart pan** A shallow pan that ranges in diameter from 4½ to 12½ inches. (p. 686)
- tartar sauce** A sauce made of mayonnaise and chopped pickles. (p. 563)
- taste bud** A specialized cell for tasting that is scattered over the surface of the tongue. (p. 422)

teamwork Learning to effectively communicate, resolve conflicts, and develop negotiation skills. (p. 89)

* **technique** Method. (p. 27)

* **tempted** Enticed. (p. 709)

theme restaurant A restaurant that tries to recreate another place or time. (p. 142)

thick soup A soup that is not clear or transparent. Thick soups include a thickening agent, such as roux; cream; or a vegetable purée. (p. 529)

thickening agent An ingredient, such as cornstarch, that adds body to a sauce. (p. 517)

tip A small bonus payment from a customer as a reward for excellent service. (p. 109)

tomato sauce Made by simmering a tomato product with flavorings, seasonings, and stock or another liquid; one of the mother sauces. (p. 519)

torpedo (tôr-'pē-(,)dō) roll A long, skinny sandwich roll. (p. 489)

tortilla (tôr-'tē-yə) A flattened, round bread baked on a griddle or deep-fried. (p. 489)

total weight as served Multiply the number of portions by the portion weight when the food is served. (p. 352)

tournée (tōr-'nə) Turn vegetables using a tournée knife; creates a football shape. (p. 461)

toxin A harmful organism or substance. (p. 14)

trade publication A magazine or newsletter produced by and for members of the foodservice industry. (p. 95)

traffic path How people and materials move within a foodservice operation. (p. 183)

trans fatty acid An unsaturated fat that goes through the hydrogenation process. Also called trans fat. (p. 282)

* **transfer** To pass to food. (p. 252)

translucent Clear. (p. 422)

* **transmit** Spread. (p. 16)

tray service Bringing dishes to the table at the same time on a large tray. (p. 131)

tray stand A stand that has metal, wood, or plastic leg frames that will fold. Also called a tray jack. (p. 131)

trayline service Customers go through a food line and place items on their own trays. (p. 143)

trend A general preference or dislike for something within an industry. (p. 68)

trichinosis (,tri-kə-'nō-səs) An infestation by a parasite that can cause muscular pain, stomach upset, fever, weakness, and swelling. (p. 609)

trim To cut off excess fat or to cut food to a desired shape or size. (p. 350)

trim loss The weight of the waste material that was trimmed from the purchased product. (p. 351)

trueing Using a steel to keep a blade straight and to smooth out irregularities after sharpening. (p. 259)

trussing Tying up a bird's wings and legs against the body. (p. 575)

truth-in-menu guideline A guideline that ensures truthfulness in statements about nutrition, quantity, quality, grade, and freshness. (p. 315)

tuber The short, fleshy underground stems of plants. (p. 647)

tuile ('twēl) A Belgian molded cookie that comes out of the oven soft. (p. 751)

tunnels Large, irregular holes in bread. (p. 739)

* **turn** To become. (p. 748)

turnover rate The average number of times a seat will be occupied during a block of time. (p. 182)

U

underliner A dish placed under another dish to protect the table from spills. (p. 133)

uniform Clothing that is worn by a particular group to help identify workers. (p. 119)

* **uniform** Even in shape and size. (p. 255)

unit cost The cost of each individual item. (p. 349)

univalve ('yü-ni-,valv) A mollusk that has a single shell. (p. 550)

* **upscale** For more affluent customers. (p. 322)

upselling Suggesting a larger size or better quality than the customer's original order. (p. 129)

V

vacuum packed Placed in air-tight containers from which the air has been removed to prevent the growth of bacteria. (p. 547)

* **variation** Change. (p. 496)

* **varied** Available in different kinds. (p. 471)

veal The meat from calves that are less than nine months old. (p. 599)

vegan ('vē-gən) Someone who does not eat any meat or animal products. (p. 293)

vegetable stock A stock made from vegetables, herbs, spices, and water. (p. 513)

vegetarian (,ve-jə-'ter-ē-ən) A person who does not eat meat or other animal-based foods. (p. 293)

veined cheese A pungent, semisoft cheese that has veins of mold running through it. (p. 472)

velouté (və-,lü-'tā) Also known as blond sauce, is made by thickening a light-colored stock with a light-colored roux; one of the mother sauces. (p. 520)

vendor A company that sells products to the food-service industry. (p. 61)

* **verify** To prove. (p. 36)

* **versatile** Adaptable. (p. 625)

vichyssoise (vi-shē-'swäz) A cold version of potato-leek soup. (p. 531)

vinaigrette (,vi-ni-'gret) A salad dressing that has a ratio of three parts oil to one part vinegar. (p. 468)

vinegar A sour, acidic liquid used in cooking, marinades, and salad dressings. (p. 416)

violation Not following a rule. (p. 198)

viruses Simple organisms that are responsible for many food-related illnesses. (p. 16)

vitamin Substance that helps regulate many bodily functions. (p. 285)

* **volume** Amount. (p. 231)

volume The space occupied by a substance. (p. 262)

volume measurement A measurement that is expressed in cups, quarts, gallons, and fluid ounces. (p. 336)

W

walls The sides of a muffin. (p. 742)

warped Turned slightly from flat because of excessive heat and use. (p. 753)

washing Applying a thin glaze of liquid to dough's surface before baking. (p. 719)

waxy potato A potato with thin skin and less starch than mealy potatoes. (p. 650)

weight The heaviness of a substance. (p. 262)

well done Meat that is browned on the surface and gray on the inside. (p. 610)

wet cure A brine. Food is submerged in a mixture of sea salt, a sweetener, spices, and herbs that are dissolved in water. Then, the food is dried or cooked. (p. 457)

wheat A very versatile grain that is also milled into semolina and cracked wheat. (p. 627)

* **whet** To increase, as an appetite. (p. 477)

whetstone A sharpening stone made of either silicon carbide or stone. (p. 259)

whew The liquid portion of coagulated milk. (p. 471)

whip Vigorously beating ingredients to add air. (p. 700)

white rice Rice that has had the outer layers of the grain removed. (p. 625)

white stock A stock made from chicken, beef, veal, or fish bones simmered with vegetables. (p. 511)

* **withered** Shrunken and wrinkled. (p. 660)

* **withstand** To hold up to. (p. 262)

wok A large pan with sloping sides. (p. 384)

work ethic A personal commitment to doing your very best as part of the team. (p. 88)

work flow The orderly movement of food and staff through the kitchen. (p. 221)

work section Similar work stations that are grouped into larger work areas. (p. 220)

work simplification To perform a task in the most efficient way possible. (p. 222)

work station A work area that contains the necessary tools and equipment to prepare certain types of foods. (p. 220)

workers' compensation Insurance that pays for medical expenses and lost wages if you are injured on the job. (p. 106)

Y

yeast A living organism used as a leavener. (p. 694)

yield The amount of servings in a recipe. (p. 331)

yield grade Measures the amount of usable meat on beef and lamb. (p. 592)

yield percentage The ratio of the edible portion of food to the amount of food purchased. (p. 350)

yield test A process by which AP food is broken down into EP and waste. (p. 350)

yield weight AP weight minus trim loss. (p. 351)

Z

zest The rind of a fruit. (p. 402)

zoning A system that divides land into sections used for different purposes. (p. 78)

Index

A

À la carte menu, 310
Abrasion, 11
Accident report log, 201
Accompaniments, 312
 on menus, 319
 salads, 463
Active listening, 85
Activity level, nutritional needs and, 293
ADA (Americans with Disabilities Act), 206
Additives, 286, 287
 in baking, 697
 for desserts, 698
Advertising, 191–192
Affirmative action, 205
Age, nutritional needs and, 291
Age discrimination, 205, 206
Age Discrimination in Employment Act (1967), 206
Aging, of beef, 603
Air, as leavening agent, 694
Airline meals, 143
Al dente, 620
Albumin, 433
Alcohol service, 120
Alcohol use by employees, 181
Allspice, 411
Almonds, 417
American cuisine, seasonal, 68
American Culinary Federation, 65
American Grinders, 493
American omelets, 438
Americans with Disabilities Act (ADA), 206
American-style ice cream, 771
Amino acids, 281
Angel food cakes, 756, 760
Anise seeds, 411
Antipasto, 481
AP price. *See* As-purchased price
AP (as-purchased) weight, 353
Appearance, in plate composition, 425
Appetizer service, 133
Appetizers, 133, 318
 salads, 463
Apple corers, 263
Apple Wheat Germ Cake, 692
Apprentices, 65, 95
Aroma, 410
 cooking and, 379
 sensory perception of, 422–423
Arrowroot, for sauce thickening, 518
AS (as-served) portion, 352
Aspic, 480
As-purchased (AP) price, 351–352
As-purchased (AP) weight, 353
As-served (AS) portion, 352
Associate's degree programs, 63
Atmosphere, 191
Attitude, as service skill, 119
Au jus, 499
Audits, safety, 12

Autocratic leadership, 172
Average check method (menu pricing), 322
Avulsions, 11

B

Bachelor's degree programs, 64
Back braces, 4
Back injuries, preventing, 6
Bacon, 432, 435
Bacteria, 14–16
 battle against, 36
 glow test for, 39
 salmonella, 575
Bagels, 445
Bag-in-the-box system, 122
Bain marie, 242, 243
Baked custards, 772
Baked puddings, 773
Bakeries, careers in, 72
Baker's percentage, 333
Bakery ovens, 682, 684
Bakeshops
 formulas, 678–681
 ingredients, 688–697
 large equipment, 684
 measurements, 678–681
 mixing batters and doughs, 697–700
 smallwares, 684–686
Baking, 382
 biscuits, 733
 cakes, 759, 762
 cookies, 753
 fish and shellfish, 559, 560
 fruits, 644
 muffins, 741
 pasta, 619, 620
 pies, 769
 poultry, 577
 tools for, 685
 vegetables, 655
 yeast breads and rolls, 721–723
Baking blind, 767
Baking cup, 738
Baking powder, 694
Baking soda, 694
Balance
 in facility spaces, 182
 on menus, 314–315
Balance scales, 269, 336, 679, 680
Banquet facilities, careers in, 71–72
Banquette, 146
Banquette service, 146
Bar codes, 365
Bar cookies, 752, 753
Barding, 577, 588
Barley, 626–627
Barnacles, 552
Barquette, 502
Base, 510
Basic pie dough, 765, 768
Basil, 407
Basting, 383, 577
Batch cooking, 299–300
Batonnet, 259
Batters, 384
 drop, 731
 mixing, 697–700
 pour, 731
 scaling, 761
Bavarians, 773–774
Bay leaf, 407
Beating, 698
Béchamel Sauce, 517, 519, 522
Beef, 601–603
Beef Consommé, 533
Bench box, 718
Bench mixers, 232
Bench rest, 718
Bench scrapers, 267
Benefits, 110
Beverage service, 121–125
 alcohol, 120
 cold beverages, 127–128
 hot beverages, 128
 taking orders, 127
 water, 128
Beverages, on menus, 319
Bid, 361
Bins, for professional kitchens, 228, 229
Biological hazards, 14, 15
Biscuit method, 731
Biscuits, 445, 731–734
Bisques, 531
Bivalves, 550
Black pepper, 401
Blanching, 389–390, 655
Blenders, 233
Blending method, 698
 cakes, 758, 760
 muffins, 737
 quick breads, 731
Blends, flavoring, 404
Blind taste test, 424
Body language, 86, 121
Boiling, 389, 630
 pasta, 619, 620, 631
Boiling point, 389
Bolsters, 253
Boneless fish, 542
Boning knife, 254
Booth service, 145
Booths, 145
Bouchée, 502
Bouillon, 527
Bouquet garni, 400, 406, 510
Bouquetière, 657
Box graters, 266
Braising, 392–393
 grains, 631
 meats, 609
 poultry, 580, 581
 vegetables, 657
Brazils, 417

- Bread crumbs, thickening sauces
 - with, 518
 - Bread flour, 688–689
 - Bread service, 133
 - Breading, 384
 - Breads
 - for breakfasts, 443–447
 - quick breads, 730–742
 - for sandwiches, 488–489
 - yeast breads, 706–724
 - Break even, 175
 - Breakfast
 - bread and cereals for, 443–450
 - protein foods for, 432–441
 - quick-service, 443
 - Breakfast menus, 311
 - Brochettes, 502
 - Broilers, 236, 239
 - Broiling, 386–387
 - fish and shellfish, 560, 561
 - fruits, 643
 - meats, 607
 - poultry, 579
 - vegetables, 653, 655
 - Broth, 527
 - Brown rice, 625
 - Brown stock, 511, 513
 - Brown sugar, 691
 - Brunoise, 259
 - Buffet restaurants, 143
 - Buffet service, 149
 - Buffets, 149, 479–480
 - Bulk purchases, 351, 551
 - Burns
 - first aid for, 10–11
 - preventing, 5–6
 - types of, 10
 - Bus stations, 152
 - Business ownership, types of, 77
 - Business plans, 76–77
 - Bussers, 118
 - Butcher knife, 254
 - Butchers, 589
 - Butler service, 148–149
 - Butter(s)
 - for baking, 690
 - compound, 520–521
 - for sandwiches, 489
 - Butter cutters, 264, 460
 - Butterflied fish, 544
 - Bypassing, 183
 - By-products, 353
- C**
- Cafeterias, 71
 - Cake flour, 689
 - Cakes, 755–763
 - angel food, 756, 760
 - baking, 759, 762
 - chiffon, 757–758, 760
 - cooling, 762
 - foam, 756, 760
 - high-fat, 755
 - high-ratio layer cakes, 757–758
 - icing, 762–763
 - layer, 755
 - low-fat, 755
 - mixing methods, 759–760
 - pound, 755, 756
 - preparation methods, 760–762
 - sponge, 756, 760
 - storing, 762
 - Calamari, 556
 - Calculating numbers, 84
 - Calibrating thermometers, 35
 - California menu, 310
 - Can openers, 233
 - Canadian bacon, 432
 - Canapés, 456, 477–478
 - Cancer, 294–295
 - Canned foods
 - fish, 547
 - fruits, 639
 - potatoes, 651
 - storage of, 41
 - vegetables, 651–652
 - Caper, 563
 - Cappuccino, 123
 - Caramelization, 379
 - Carbohydrates, 280
 - Carcasses, meat, 589, 590
 - Cardamom, 411
 - Cardiopulmonary resuscitation (CPR), 11
 - Cardiovascular disease, 282, 293, 294
 - Careers in foodservice, 58–72
 - in bakeries and pastry shops, 72
 - in banquet facilities, 71–72
 - basic skills needed for, 84–88
 - in catering, 72
 - education for, 62–64
 - employee responsibilities in, 104–105
 - employer responsibilities in, 105–107
 - for entrepreneurs, 74–78
 - entry-level learning for, 64–66
 - ethical behavior in, 107–108
 - finding. *See* Job searches
 - in hotels and resorts, 71
 - leadership skills for, 90–92
 - in management, 59–61
 - in production, 38–39
 - in restaurants, 70–71
 - rewards and demands of, 61–62
 - in service jobs, 58
 - teamwork in, 107
 - wages and benefits in, 108–110
 - work ethic for, 88–90
 - Carry-out orders, 134
 - Carryover cooking, 382
 - Carving
 - roasted meats, 607
 - turkey, 578
 - Cashews, 417
 - Cashiers, 118–119
 - Casseroles, 619
 - Casual-dining establishments, 142
 - Catering, 72, 143
 - Catering directors, 60
 - Cavity, 582
 - Cayenne, 412
 - Ceilings, regulations for, 202
 - Celery seeds, 411
 - Centerpieces, 158
 - Cephalopods, 550
 - Cereals, 443–444, 448–450
 - Certification programs, 63
 - Certifications, 62, 63
 - Certified Professional Food Manager
 - certification, 62
 - Chafing dishes, 149
 - Chain restaurants, 75
 - Channel knife, 460
 - Chapatti, 489
 - Charcuterie, 458
 - Checks, calculating and presenting, 134–136
 - Cheddaring, 471
 - Cheese slicers, 263
 - Cheese trays, 480
 - Cheeseclath, 518
 - Cheeses, 471–475
 - cooking with, 473
 - firm, 472
 - hard, 471–472
 - history of, 474
 - on menus, 319
 - for sandwiches, 491, 494
 - sanitary handling of, 494
 - semisoft, 472–473
 - soft, 473–474
 - specialty, 474–475
 - types of, 471
 - Chefs
 - history of, 63
 - types of, 59, 60
 - Chef's coat, 26
 - Chef's fork, 265
 - Chef's knife, 253
 - Chemical dough conditioners, 708
 - Chemical hazards, 17–19
 - Chervil, 407
 - Chestnuts, 417
 - Chewy cookies, 748
 - Chez Panisse, 68
 - Chicken, 570, 577
 - Chiffon cakes, 758, 760
 - Chiffonade cuts, 255, 257
 - Chiffons, 774
 - Children, nutritional needs of, 292
 - Chiles, 412
 - Chili powder, 411
 - China cap, 266
 - Chinois, 266
 - Chives, 407
 - Chlorophyll, 379
 - Chocolat, 693, 696, 697

Index

- Choking, first aid for, 11
- Cholesterol, 282
- Chowders, 531
- Chutney, 642
- Cilantro, 407
- Cinnamon, 411
- Civil Rights Act (1964), 206
- Clams, 550-551
- Clarified butter, 521
- Clarify, 528
- Classical French service, 146-147
- Cleaning, 18
 - equipment for, 239-240
 - of kitchen equipment, 7
 - of kitchens, 18-19
 - safety of products, 18
- Cleanliness, of foodhandlers, 26-29
- Clear soups, 527-529
- Clearing tables, 134
- Client base, 119
- Clientele, 189
- Clip-on menus, 318
- Closed sandwiches, 488
- Closing restaurants, 183
- Clothing
 - for foodhandlers, 26
 - for job interviews, 98
 - protective, 4, 26
 - for service staff, 119
- Club sandwiches, 499
- Coagulate, 378
- Coarse sugar, 691
- Cobblers, 644
- Cocoa, 696, 697
- Cocoa powder, 697
- Coffee makers, 122-123, 125
- Colanders, 266, 621
- Cold beverage equipment, 122
- Cold beverage service, 127-128
- Cold cereals, 444, 449
- Cold platters, 477-482
 - hors d'oeuvres, 477-478
 - preparation of, 479-482
- Cold sandwiches, 499-500
- Cold soups, 531
- Cold-pack cheeses, 474-475
- Collagen, 588
- Color of foods
 - cooking and, 378-379
 - meats, 610
 - in plate composition, 425
 - sensory perception of, 421-422
- Combination cooking, 376-377, 392-394
- Combination steamer/oven, 237
- Combination trays (cold), 481
- Commercial dishwashers, 45-46
- Commercial kitchens. *See* Professional kitchens
- Commercial operation, 70
- Commercial stock bases, 510
- Commitment, as job skill, 90
- Communication
 - by foodservice managers, 171
 - as service staff skill, 120, 121
- Compensating, skills for, 92
- Compensatory time, 106
- Competition, analyzing, 189-190
- Competitive buying, 361
- Competitor, 189
- Competitors' pricing method (menu pricing), 322
- Complete protein, 281
- Compote, 642
- Compotier, 645
- Compound butters, 520-521
- Compressed yeast, 694
- Computer skills, 92
- Condiments, 152, 416
- Conduct, standards of, 180-181
- Conduction, 234
- Confectioners' sugar, 691
- Conflict resolution, 107
- Connective tissue, 571, 588
- Consommé, 528-529
- Contamination, 14-17
- Continental menu, 311
- Continuous bread making, 715
- Contract foodservice, 143
- Contribution margin method (menu pricing), 322
- Convection, 234, 389
- Convection ovens, 238, 239, 682
- Conversion factor, 337
- Converted rice, 625
- Converting recipes, 335, 337-342
- Cooked salad dressings, 469
- Cookies, 748-753
 - baking, 753
 - cooling, 753
 - mixing methods, 749-750
 - spread of, 748-749
 - troubleshooting dough, 749
 - types of, 748, 751-753
- Cooking, 377-380
 - combination, 376-377, 392-394
 - dry, 376, 382-387
 - general guidelines for, 43
 - moist, 376, 389-392
 - preventing nutrient loss during, 298-299
 - techniques for, 376-377
 - temperatures for, 341
 - time required for, 339
- Cooking equipment, 231, 234-239
- Cooking line, 221-222
- Cooking loss test, 353-354
- Cookware, 262, 270-273
- Cooling food, 17, 39
 - biscuits, 734
 - cakes, 762
 - cookies, 753
 - HACCP requirements for, 32-35
 - legumes, 663-664
 - safety guidelines for, 43-44
 - stocks, 514-515
 - yeast breads and rolls, 723
- Corn, 627
- Corn syrup, 691
- Cornstarch, as thickening agent, 517
- Corporate training programs, 65
- Corporations, 77
- Cost control, 350-357
 - costing recipes, 354-357
 - inventory control, 364-366
 - portion control, 350-351
 - and purchase of goods, 359-362
 - and receiving goods, 362-364
 - unit costs, 351-352
 - yield percentages, 352-354
- Cost per portion, 355
- Costing recipes, 354-357
- Cottage fries, 443
- Coulis, 518
- Count (recipes), 337
- Counter scale, 225
- Course service, 132-133
- Courses (meal), 118
- Couscous, 627
- Cover letters, 98, 99
- Covers (expected meals served), 322
- Covers (place settings), 127
- CPR (cardiopulmonary resuscitation), 11
- Crab, 554-555
- Crayfish, 555
- Cream soups, 530, 689
- Creaming method, 731
 - cakes, 760
 - cookies, 750
 - muffins, 738
- Credit card check payments, 136
- Crème Anglaise, 773
- Crêpes, 489
- Crisp cookies, 748
- Critical control points, 32-35
- Croissants, 488, 710
- Cross-contamination, 14, 592
- Crosshatch, 579
- Cross-training, 59
- Croutons, 463
- Crudités, 479
- Cruise ship dining, 144
- Crumb (of baked products), 688
- Crumbing tables, 134
- Crust (of breads), 708
- Crustaceans, 553-555
- Cryovaced, 642
- Cuisine, 69
- Culinary scientists, 60
- Culture, menu items and, 309
- Cumin, 412
- Curdle, 437
- Curing, 597
 - beef, 603
 - pork, 597
- Custards, 771-773
- Custard-style ice cream, 771

Customer base, 189
Customer preferences, 69
Customer satisfaction, assessing, 134
Customer service, 116–125, 127–136
 during and after the meal, 134
 beverage service, 121–125
 calculating and presenting checks, 134–136
 for carry-out orders, 134
 opening service, 127–130
 serving the order, 131–134
 skills for, 119–121
 staff for, 116–119
Customers with special needs, 116
Cuts (injuries), 5
Cuts (of meat), 255–259
Cutting boards, 263
Cycle menus, 310

D

Daily values of nutrients, 290
Dairy products
 in baking, 689
 storage of, 40
Danish pastries, 444, 771
Danish pastry dough, 711
Dark meat, 571
Deaths, workplace, 207
Deboning, 352
Deck ovens, 238, 682
Decorating spatulas, 460
Deductions, paycheck, 109
Deep-fat fryers, 235
Deep-frying, 385–386
 fish and shellfish, 561
 fruits, 644
 poultry, 580
 vegetables, 655
Deflate, 733
Deglaze, 392
Dehydrated foods, 434, 651
Dehydration, 293
Delegation, 172
Delmonico's Restaurant, 142
Demi-glace, 519
Demitasse, 124
Democratic leadership, 172
Design of facilities, 182, 202–203
Dessert salads, 463
Dessert service, 133
Desserts
 additives for, 698
 Bavarians, 773–774
 cakes, 755–763
 chiffons, 774
 cookies, 748–753
 custards and puddings, 771–773
 frozen, 771
 on menus, 319
 mousses, 774
 pies, 765–769

 salads, 463
 storing and serving, 774
Deveining, 553
Diabetes, 294
 and menu food choices, 316
 nutrition needs with, 294
Diagonal cuts, 255, 257
Dicing food, 255
Dietary Guidelines for Americans, 290
Dieting
 menu food choices for, 315–316
 nutritional needs during, 295
 soups for, 528
Digestible nutrients, 663
Digital scales, 336
Dill, 407
Dill seeds, 412
Diminished taste/freshness, 638
Dining environments, 142–149, 151–158
 dish, glass, and utensil choices, 152, 155
 side work, 151–154
 table setting, 156–158
 types of meal service, 144–149
 types of restaurants, 142–144
Dining room supervisors, 60
Dinner menus, 312
Dips, 481
Direct contamination, 14
Direct labor costs, 173
Direct marketing, 192
Disability, 206
Discrimination, 106, 205, 206
Dish choices, 152, 155
Dishwashers, 239–240
Dishwashing, 45–46
Disposable income, 321
Disposal of food, 44–45
Disposal point, 44
Distractions, in listening, 85
Docking, 721
Dollies, 225
Double pan, 753
Double-entry bookkeeping, 173
Doughnuts, 445
Doughs, 697
 chemical dough conditioners, 708
 cookie, 749
 Danish pastry, 711
 fermentation of, 715, 716
 flaky, 766
 hard lean, 708
 mealy, 766
 mixing, 697–700
 modified straight dough method, 713, 714
 pie, 765–768
 rolled-in fat, 709–711
 soft medium, 708–709
 straight dough method, 713
 sweet rich, 709
Drained weight, 652
Drawn fish, 544

Dredging, 384, 385, 579
Dressed fish, 544
Dressing, 468
Dried foods
 fruits, 642
 milk solids, 689
 pasta, 616, 619
 vegetables, 652
Drip loss, 546
Drop batter, 731
Drop cookies, 751
Drug use, 181
Drupes, 638
Dry active yeast, 694–695
Dry cooking, 376, 382–387
Dry cure, 457
Dry storage, 38, 41
Drying dishes, 46
Du jour menus, 310
Duck, 570, 577
Dusting, 767
Dutch-process cocoa powder, 697

E

Edible flowers, 466
Edible portion (EP), 352
Education, for foodservice careers, 62–64
Eels, 557
Efficiency of kitchens, 223
Egg slicers, 264
Egg substitutes, 434
Eggs
 for baking, 693–694
 for breakfasts, 433–441
 composition of, 433
 cooking, 435–441
 forms of, 434
 grades quality of, 433
 internal cooking temperatures for, 34
 safety in preparing, 40
 storage of, 40
Eijkman, Christiaan, 293, 294
Elastic, 739
Elastin, 588
Elderly, nutritional needs of, 292
Electricity, for cooking, 234
Electronic ordering, 130
Electronic scales, 269, 336
Emergencies, 9
Emergency procedures, 9–12
Emergency reports and audits, 12
Empathy, 107
Employees
 evaluation of, 181–182
 managing, 179–182
 protection of, 182
 recruiting, 76
 responsibilities of, 104–105
 selection of, 179–180
 supervision of, 180–181

Index

temporary/part-time, 222
training of, 180
Employers, responsibilities of, 105–107
Employment agencies, 96
Employment laws, 205–205
for employee protection, 206–207
for equal opportunities, 205–206
responsibilities under, 207–208
Emulsified shortening, 756
Emulsifiers, 474
En papillote, 559
English muffins, 445
English service, 148
Enriched rice, 625
Entrée service, 133
Entrées, 309, 319
Entrepreneurial careers, 74–78
Entrepreneurs, 74
Entry-level learning, 64–66
Environmental impact statement, 200
Environmental Protection Agency
(EPA), 4, 200
EP (edible portion), 352
EPA. *See* Environmental Protection
Agency
Equal Employment Opportunities Act
(1972), 206
Equipment
cleaning and maintenance of, 226
cooking, 231, 234–239
for garde manger, 438–459
holding, 242–246
and menu items, 309
for portioning, 351
preparation, 231–240
regulations for, 202
selection of, 226
service, 246
specified in recipes, 339
storage, 227–228
Equipment handling, 185
Ergonomics, 207
Escargot, 556
Escoffier, Auguste, 63
Espresso, 122
Espresso machines, 123–125
Ethics, 107–108
Ethnic menus, 311, 312
Ethylene gas, 639
Evaluations, job, 105–107, 181–182
Evaporation, 376
Excellence, commitment to, 90
Executive chefs, 60
Expenses, 174
Extenders, 319
Extracts, 400

F

Fabricated cut, 589
Facilities management, 182–186
Facility maintenance, 202–203
Factor method (menu pricing), 321

Fair labor practices, 106
Falls, preventing, 4–5
Family, Career and Community
Leaders of America (FCCLA), 90
Family structure, trends in, 69
Family-style restaurants, 142
Family-style service, 146
Fat cap, 588
Fats
for baking, 689–691
in cooking meat, 608
as nutrient, 300
in poultry, 580
reducing, 300, 302
for roux, 521, 522
Fat-soluble vitamins, 284, 285
Fatty fish, 542
Fatty salad dressings, 468–469
FCCLA (Family, Career and Commu-
nity Leaders of America), 90
FDA regulations. *See* Food and Drug
Administration regulations
Federal Employment Compensation
Act (1993), 207
Fennel seeds, 412
Fermentation, 694
of vegetables, 416
of yeast doughs, 715, 716
Fiber, 280
FIFO (first in, first out), 38
Fillet knife, 254
Fillets, 544
Fillings
pie, 767, 769
sandwich, 484, 491
Fine-dining restaurants, 70, 71, 142
Finger food, 477
Finger sandwiches, 488
Fire extinguishers, 8
Fire safety, 7–9
emergency procedures, 9
fire protection equipment, 8–9
prevention of fires, 7–8
Firm cheeses, 472
First aid, 9–12
for burns, 10–11
for choking, 11
for wounds, 11
First in, first out (FIFO), 38
Fish, 542–547
canned, 547
cooking, 559–563
fresh, 544–546
frozen, 545–546
garnishing, 563–564
market forms of, 542–544
plating, 563
for sandwiches, 491
structure of, 542
Fish stock, 34, 513
Fixed menus, 310
Flakes, 559
Flaky dough, 766

Flambé, 147
Flammable materials, 6, 8
FlashBake ovens, 238
Flat fish, 351, 542
Flat-top ranges, 234, 235
Flatware, 152, 155
Flavor enhancers, 400, 425
Flavor of foods
cooking and, 379–380
in plate composition, 426
salad greens, 464, 465
sensory perception of, 422
Flavored oil, 416
Flavorings, 400, 403–404, 695–696.
(*See also* Seasonings and
flavorings)
Flexibility, as job skill, 89
Flexibility of menus, 316–317
Floors, regulations for, 202
Florets, 647
Flour
for baking, 688–689
for pastas, 616
for roux, 522
for sauce thickening, 517
Flow of food, 31, 38–45
cooling, 43–44
disposal, 44–45
in HACCP system, 31–32
holding, 42–43
preparation, 42–43
receiving, 38
reheating, 44
serving, 43
storage, 38–42
Flowers, edible, 466
Fluting, 767
Fluting knife, 460
FMPs (Foodservice Management Pro-
fessionals), 171
Foam cakes, 760
Focaccia, 489
Focal point (for booth service), 145
Fold, 446
Fondant, 763
Fondue, 644, 655
Food
contaminated, 14
flow of. *See* Flow of food
Food, Drug, and Cosmetic Act (1938),
199
Food additives. *See* Additives
Food allergies, 294, 316, 317
Food and Drug Administration (FDA)
regulations, 199–200
Food and Nutrition Board, National
Academy
of Sciences, 289
Food Code, 200
Food cost percentage, 173
Food courts, 143
Food handling inspections, 185
Food inspections, 176–177

Food mills, 266
 Food molds, 267
 Food orders
 carry-out, 134
 serving, 131–133
 taking, 129–131
 Food preparation, 42
 avoiding contamination during, 42–43
 equipment for, 231–240
 tableside, 146, 147
 time required for, 339
 Food processors, 231, 232
 Food production businesses, 74
 Food Safety and Inspection Service (FSIS), 198–199
 Food thermometers, 34–35
 Foodborne illnesses, 14–17
 causes and symptoms of, 15
 outbreak response for, 17
 Foodhandler, 26
 Foodhandler cleanliness, 26–29
 Food-handling hazards, in HACCP system, 32
 Foodservice consultants, 75
 Foodservice directors, 60
 Foodservice industry, 58
 careers in. *See* Careers in food-service
 trend forecasts for, 69–70
 trends in, 68
 Foodservice management, 75–76, 170–177
 effectiveness in, 170–172
 to maintain profitability, 173–177
 structures for, 170
 Foodservice Management Professionals (FMPs), 171
 Forcemeat, 456
 Forecasting, 175
 in foodservice industry, 70
 for profitability, 175
 Formulas (recipes), 331
 Franchise restaurants, 75
 Free enterprise, 78
 Free-form loaves, 718
 Freezer burn, 226
 Freezers, 226, 228, 229
 French omelets, 438
 French toast, 446
 Fresh foods
 cheese, 473
 fruits, 638–639
 pasta, 619
 potatoes, 651
 produce, 41
 vegetables, 647
 Frittatas, 439
 Frog legs, 556
 Frozen foods
 desserts, 771
 fish, 545–546

fruits, 642
 meats, 592–593
 potatoes, 651
 vegetables, 652
 yogurt, 771
 Frozen storage, 38, 41
 Fruit corers, 263
 Fruit trays, 480
 Fruits, 638–645
 canned, 639
 cooking, 642–645
 dried, 642
 fresh, 638–639
 frozen, 642
 as garnishes, 459–461
 grading of, 638, 642
 on menus, 319
 purchasing, 638
 ripening, 638–639
 Frying, 384
 eggs, 437, 438
 poultry, 579, 580
 sandwiches, 497
 FSIS. *See* Food Safety and Inspection Service
 Full-service restaurants, 70, 71
 Fumet, 513
 Fungi, 16
 Funnels, 266

G
 Game hens, roasting, 577
 Garbage disposals, 239
 Garde manger, 59, 456–461
 equipment for, 438–459
 garnish preparation, 459–461
 history of, 438
 Garde manger brigade, 457
 Garlic chives, 408
 Garnishes, 314
 for fish and shellfish, 563–564
 fruits, 645
 in plate composition, 426
 preparation of, 459, 461
 for soups, 534–535
 tools for, 460
 vegetables, 657
 Gas cooking, 234
 Gelatinization, 517
 General safety audit, 11
 Genetically engineered food, 199
 Genoise, 756
 Giblets, 571, 574
 Ginger, 413
 Glassware choices, 152, 155
 Glazes, 513–514
 Glazing yeast breads and rolls, 723
 Gloves, protective, 4, 595
 Glucose, 280
 Gluten, 688, 739
 Glycogen, 293
 Goose, 570, 577

Government nutrition guidelines, 289–291
 Governmental regulations, 198–201
 Grading, 198
 of eggs, 433
 of fruits, 638
 of meats, 591
 of poultry, 572–573
 of shellfish, 549
 of vegetables, 647
 Grains, 607, 624–632
 cooking, 630–632
 rice, 624–626
 Granola, 444
 Granulated sugar, 691
 Gravy, 520
 Grease fires, extinguishing, 9
 Green Beans in Garlic Sauce, 332
 Green peppercorns, 401
 Greeting customers, 127
 Griddles, 235, 239, 386
 Grill restaurants, 143
 Grilling, 299, 386
 fish and shellfish, 560, 561
 fruits, 643
 meats, 607
 poultry, 579
 sandwiches, 496–498
 vegetables, 653, 655
 Gross pay, 109
 Guinea, 570

H
 HACCP. *See* Hazard Analysis Critical Control Point
 Hair, of food handlers, 26–27
 Hair restraint, 26
 Hallmarks, recipe, 330
 Ham, 432, 434
 Hand sanitizer, 27
 Hand service, 131
 Hand tools, 262–267
 Hand-washing, 27–28
 Hard cheeses, 471–472
 Hard lean doughs, 708
 Hard wheat flour, 688
 Hard-cooked eggs, 437
 Hash, 432, 435
 Hash browns, 443
 Hazard, 14
 Hazard Analysis Critical Control Point (HACCP), 31–36
 critical control points in, 32–35
 flow of food in, 31–32
 food-handling hazards in, 32
 kitchen design in, 33
 structure of, 31
 system monitoring, 35–36
 Hazelnuts, 417
 Health
 of foodhandlers, 27
 and nutritional needs, 293–295
 for service staff, 120

Index

Heat lamp, 384
Heat sources, for cooking, 231, 234
Heat transfer, 262
Heat treated glass, 155
Heavy lifting, 6, 7
Height, in plate composition, 426
Heimlich maneuver, 11
Hepatitis A, 16
Herbs, 404, 406–410, 466
High-fat cakes, 755
High-heat cooking, 605
Highlighting (menu items), 128
High-ratio layer cake, 758
Holding equipment, 242–246
Holding food, 42–43, 299–300
Hollandaise sauce, 517, 520
Home fries, 443
Hominy, 627–628
Honesty, as job skill, 89
Honey, 693
Hood systems, 8–9
Hors d'oeuvre platters, 477–478, 481–482
Hors d'oeuvre variés, 477
Hors d'oeuvres, 148
Hospitality industry, 68–72
 foodservice jobs in, 70–72
 trend forecasts for, 69–70
Hosts, 116–117
Hot beverage equipment, 122–125
Hot beverage service, 128
Hot cereals, 443–444, 448–449
Hot peppers, 402
Hot sandwiches, 496–400
Hotel pans, 242, 271
Hotel restaurants, 144
Hotels, careers in, 71
Human resources, 172
Hummus, 478
Hydrogenation, 282

I

Ice cream, 771
Ice makers, 122
Icebox cookies, 751
Illness
 foodborne, 14–17
 in foodhandlers, 29
Immigration and Nationality Act (INA), 207
Immigration laws, 207
Immigration Reform and Control Act (IRCA), 207
In season, 638
INA (Immigration and Nationality Act), 207
Income, 174
Incomplete protein, 282
Independent restaurants, 75
Indirect labor costs, 173
Individually quick frozen (IQF), 552
Infants, nutritional needs of, 292

Information, effective use of, 91
Infrared ovens, 238
Infuse, 124
Ingredient list, 331
Inhibitor, 360
Initiative, 105
Injuries, workplace, 207
Inspections, 198
 of food, 176, 177, 198–199
 of food handling, 185
 of meats, 591
 of poultry, 572–573
 of received goods, 363–364
 for safety, 184
 of shellfish, 549
Instant starches, thickening with, 518
Insurance, business, 78
Insurance, purpose and types of, 186
International soups, 531–532
Internet, as job resource, 96
Internships, 66
Interstate commerce, 205
Interviews. *See* Job interviews
Inventory, 175, 353
Inventory control, 175, 176, 364–366
Invoices, 225, 363
IQF (individually quick frozen), 552
IRCA (Immigration Reform and Control Act), 207
Irradiation, 199, 597
 beef, 603
 pork, 597
Islands, kitchen, 221
Issuing (foods), 359, 365–366
Italian meringue, 763

J

Jewelry, removing, 26
Job applications, 96, 97
Job descriptions, 179
Job interviews, 97, 98, 100–101, 179–180
Job leads, 96
Job offers, responding to, 102
Job portfolios, 96
Job rotation, 66
Job searches, 94–102
 applying for jobs, 96–99
 interviews, 98, 100–101
 job offer responses, 102
 resources for, 94–96
Jobs. *See* Careers in foodservice
Journeyman, 95
Juicers, 233
Julienne, 259

K

Kaiser rolls, 489
Kale, 465
Ketchup, 416
Kettles, 237
Keywords, 98
Kind (poultry), 570

Kitchen brigade system, 58–59, 63
Kitchen equipment, safety with, 7
Kitchen managers, 60
Kitchen shears, 263
Kitchens
 cleanliness of, 18–19
 HACCP and design of, 33
 professional. *See* Professional kitchens
 sanitizers for, 44
Knives, 252–260, 460
 construction of, 252–253
 cuts with, 255–259
 gripping, 255
 sharpening and trueing, 259, 260
 skills in using, 254–259
 storing, 260
 types of, 253, 254

L

Labor costs, 173
Labor laws, 207
Labor unions, 106
Lacerations, 11
Lacto-ovo vegetarian, 293
Lacto-vegetarian, 293
Ladles, 269
Lamb, 597–599
Larding, 588
Latticework, 765
Laws, 205. (*See also* Employment laws)
Leach, 298
Leadership, 90
 by foodservice managers, 172
 skills for, 90–92
Leadership organizations, 90–91
Lean fish, 542
Leavening, 706
Leavening agents, 694
 for baking, 694–695
 for quick breads, 739–740
Legumes, 280, 660–664
 cooking, 663
 cooling, 663–664
 plating, 664
 purchasing and storing, 660
 storing, 664
 types of, 661–662
Lemon, 402
Lemongrass, 408
Lentil Stuffed Zucchini, 665
Lesser, 638
Let down (dough), 715
Letters of request, 98
Lettuces, 464
Licensing, 78
Lifestyle, nutritional needs and, 293
Light meat, 234, 571
Lighting, sensory perception of, 421
Lighting centerpieces, 158
Lind, James, 293, 294
Line cooks, 59

Linens, table, 158
 Liners, for canapés, 477
 Lipoproteins, 282
 Liquid measures, 269
 Liquids
 for baking, 689
 for sauces, 517
 for stocks, 510
 Listening skills, 85
 Loaf breads, 739–740
 Loaf pans, 273
 Lobsters, 553
 Local regulations, 201
 Location of business, 189
 Lockout/tagout, 7
 Log, 36
 Loss prevention, 184
 Lowboy, 226
 Low-fat cakes, 755
 Low-fat diets, menu food choices for, 315–316
 Low-heat cooking, 605
 Lug, 638
 Lunch menus, 311–312

M

Macrobiotics, 293
 Maillard reactions, 607
 Main-course salads, 463
 Maintenance
 in facilities management, 186
 of kitchen equipment, 7
 Making change, 85
 Management
 of employees, 179–182
 of facilities, 182–186
 foodservice, 170–177
 Management careers, 59–61
 Mandoline, 653
 Manual dishwashing, 45
 Maple syrup, 691
 Marbling, 588
 Margarine, for baking, 690–691
 Marinades, 410
 Marinara sauce, 520
 Marinated vegetable, 481
 Marjoram, 408
 Market form, 571
 Market segment, 189
 Marketing, 77, 188–192
 advertising, 191–192
 analyzing marketplace, 188
 with atmosphere, 191
 direct, 192
 marketing plan, 191
 positioning, 190–191
 public relations, 191
 strategies for, 188–90
 Marketing plan, 191
 Marketplace, 188
 Markup-on-cost method (menu pricing), 322

Masa harina, 627
 Mass marketing, 189
 Master recipes, 332
 American Grinders, 493
 Apple Wheat Germ Cake, 692
 Béchamel Sauce, 522
 Beef Consommé, 533
 Lentil Stuffed Zucchini, 665
 Monte Cristo Cheese
 Sandwiches, 498
 Omelet with Cheese, 436
 Pancakes with Maple Syrup, 447
 Polenta, 628
 Soft Rolls, 720
 Southern Vegetable Soup, 340
 Sweet and Spicy Broccoli, 656
 Vanilla Chiffon Genoise, 757
 Master work schedule, 181
 Material safety date sheet (MSDS), 201
 Math skills, 84–85, 680–681
 Maturity, 571
 Mayonnaise, 489–490
 McDonald's®, 65
 Meal planning, 289–296
 government guidelines for, 289–291
 nutritional needs of specific groups, 291–296
 Meal service, types of, 144–149
 Meal-based menus, 310
 Mealy dough, 766
 Mealy potatoes, 650
 Measuring and measurements, 84
 abbreviations used in, 336
 bakeshops, 678–681
 equipment for, 262, 268–269
 equivalents for, 337
 scaling, 714
 Measuring spoons, 269
 Meat tenderizer, 265
 Meats, 588–593
 beef, 601–603
 for breakfasts, 432, 434–435
 cooking, 434–435, 605–610
 cross-contamination from, 592
 cuts of, 588–590, 595–603
 handling and storage of, 591–593
 inspection and grading of, 591
 internal cooking temperatures for, 34
 lamb, 597–599
 pork, 595–597
 purchasing, 590
 for sandwiches, 491
 storage of, 39–40, 599
 structure of, 588
 tenderizing, 589
 veal, 599–600
 Melon ballers, 264, 460
 Mentors, 180
 Menu board, 318
 Menu, 308–312
 categories of items on, 318–319
 design facilitating, 182

FDA regulation of, 199, 200
 importance of, 308
 influences on, 308–310
 planning principles for, 314–317
 pricing items on, 321–324
 selling, 128–129
 style and design of, 317–318
 types of, 310–312
 Meringue, 758
 Mesclun, 466
 Metric system, 335
 Microwave cooking, 234, 299
 Microwave ovens, 236, 239
 Military foodservice training programs, 65
 Milk, in baking, 689
 Mincing food, 255, 259
 Minerals, 284–286
 Minimum internal temperature, 33
 Minimum wage, 106, 207
 Mint, 408
 Mirepoix, 510
 Mise en place, 222–223
 Mixers, 231, 232, 681
 Modern American plated service, 144–145
 Modified starch, 769
 Modified straight dough method, 713, 714
 Moist baking, 559
 Moist cooking, 376, 389–392
 Molasses, 691
 Molded cookies, 751
 Molds (fungus), 16, 663
 Molds (shapes), 683, 686
 Mollusks, 550–553
 Money, handling, 135–136
 Monosodium glutamate (MSG), 402–403
 Monounsaturated fats, 283
 Monte Cristo, 497, 498
 Motel restaurants, 144
 Mother sauces, 519–522
 Mousses, 774
 MSDS (material safety date sheet), 201
 MSG. *See* Monosodium glutamate
 Muffin pans, 273
 Muffins, 445, 737–738, 741–742
 Muscle fibers, 588
 Musculoskeletal disorders, 207
 Mussels, 551, 552
 Mustard seeds, 413
 Mustards, 416
 Mutton, 597
 MyPyramid, 290, 291

N

Napkins, folding, 152–154
 National Environmental Policy Act (NEPA), 200
 Neighborhood eating establishments, 143

Index

- NEPA. *See* National Environmental Policy Act
- Nerve endings, 423
- Net pay, 109
- Net weight, 652
- Networking, 94–95
- Noncommercial operation, 70
- Nonedible items, 360
- Nonperishable condiments, 152
- Nonverbal communication, 121
- Nourishing elements, 510
- Nutmeg, 413
- Nutrient-dense food, 291
- Nutrients, 280–287
 - carbohydrates, 280
 - changed by cooking, 377
 - cholesterol, 282, 283
 - fats, 282–285
 - fiber, 280, 281
 - in fruits, 638
 - in grains, 627
 - in legumes, 660
 - in meats, 588
 - minerals, 284–286
 - in nuts, 418
 - in pasta, 616
 - in poultry, 571
 - preventing loss of, 298–302
 - proteins, 281–282
 - in quick breads, 741
 - in salad greens, 464
 - in sandwiches, 489
 - and storage of foods, 365
 - vitamins, 283–285
 - water, 286
- Nutrition
 - meal planning, 289–296
 - and menu food choices, 315
 - preventing nutrient loss, 298–302
- Nutrition Labeling and Education Act (1990), 199, 289, 290
- Nutrition labels, 199, 200, 289–290
- Nuts, 417–419, 697, 699
- O**
- Oat berries, 627
- Oats, 627
- Oblique cuts, 255
- Occupational back support, 4
- Occupational Safety and Health Act, 182
- Occupational Safety and Health Administration (OSHA), 4, 182, 201
- Off-site catering, 72
- Oils, 690
 - for baking, 690
 - commonly-used, 301
 - flavored, 416
 - as nutrient, 300
 - and sensory perception of foods, 425
- Omelet with Cheese, 436
- Omelets, 436–440
- One-stage method, 749
- Onions, 402
- On-site catering, 72
- On-the-job training programs, 66, 95
- Open-burner ranges, 234, 235, 239
- Open-ended questions (job interviews), 179
- Open-face sandwiches, 488, 497, 499
- Opening restaurants, 183
- Opening service, 127–130
- Open-market buying, 361
- Open-spit roasting, 383
- Operating costs, 321
- Oregano, 408
- Orientation, employee, 172
- OSHA. *See* Occupational Safety and Health Administration
- Oven spring, 722
- Ovens, 237–239, 682, 684
- Overhead costs, 75
- Overhead warmers, 243
- Overstaffing, 171
- Overtime pay, 108
- Ovo-vegetarian, 293
- Oysters, 550
- Oysters Rockefeller, 561
- P**
- Packaging, of yeast breads and rolls, 724
- Packing medium, 652
- Paella, 410
- Pan loaves, 718
- Pancakes, 445–447
- Pancakes with Maple Syrup, 447
- Pan-frying, 384
 - fish and shellfish, 560–561
 - meats, 608–609
 - poultry, 580
- Panning dough, 718
- Pans, 272–273, 683, 684, 686
- Pantry chefs, 59. (*See also* Garde manger)
- Paprika, 413
- Parasites, 16
- Parboiling, 390
 - rice, 625
 - vegetables, 655
- Parfaits, 774
- Paring, 254
- Paring knife, 254, 460
- Parmentier, Antoine, 651
- Parsley, 408
- Parstock, 364
- Partnerships, 74, 77
- Pasta, 616–622
 - cooking, 619–621, 631
 - origin of, 619
 - purchasing and storing, 616, 619
 - quality characteristics of, 616
 - serving, 622
 - shapes of, 617–618
 - stuffing, 621–622
 - types of, 616
- Pasteurization, 40, 434
- Pastrami, 499
- Pastries, 444
- Pastry bags, 686
- Pastry chefs, 59
- Pastry flour, 689
- Pastry shops, careers in, 72
- Pastry tools, 267, 685
- Pathogens, 14, 15
- Patronage, 119
- Pay, 108–110
- Peanuts, 417
- Pecans, 417
- Peel (board), 706
- Pepper, 401–402, 410, 413
- Peppercorns, 413
- Percentages, 680
 - working with, 84–85, 323
 - yield, 352–354
- Performance evaluations, 106–107
- Periodic-ordering method, 365
- Perishable items, 41, 360
- Perpetual inventory, 364
- Personal health
 - of foodhandlers, 27
 - for service staff, 120
- Personal hygiene, 17
 - of foodhandlers, 26
 - for service staff, 119–120
- Personal injuries, 4–7
- Personal protective clothing, 4
- Pest management, 20
- Pesticides, 19
- Pesto, 490
- pH scale, 38, 203
- Phyllo, 489
- Physical hazards, 20
- Physical inventory, 364
- Phytochemicals, 294–295
- Pickled condiments, 416
- Pie à la mode, 769
- Pie dividers, 267
- Pie dough, 765–768
- Pies, 765–769
 - baking, 769
 - fillings for, 767, 769
 - pie dough, 765–768
 - storing and serving, 769
- Pigeon, 570
- Pigment, 378
- Pilaf method, 631
- Pilot light, 234
- Pine nuts, 418
- Pistachios, 418
- Pita, 489
- Pith, lemon, 402
- Pizza cutters, 264
- Plate composition, 425–426
- Platform scale, 225
- Plating, 314–315
 - of breakfast meats, 435

- of cold cereals, 449
 - of cold sandwiches, 499–500
 - of eggs, 441
 - of fish and shellfish, 563
 - of French toast, 446
 - of fruits, 645
 - of hot cereals, 448–449
 - of hot sandwiches, 497, 499
 - of legumes, 664
 - of pancakes and waffles, 446
 - of pasta, 622
 - of poultry dishes, 582
 - of vegetables, 657
 - Poaching foods, 299, 391
 - eggs, 437
 - fruits, 645
 - poultry, 580
 - vegetables, 657
 - Point-of-sale system, 130
 - Polenta, 627, 628
 - Polyunsaturated fats, 283, 285
 - Poppy seeds, 418
 - Pork, 595–597
 - Porous, 433
 - Portion control, 174, 350–351
 - Portion scales, 225, 269, 336
 - Portion size, 331
 - Portion size conversion, 338–339
 - Positioning, 190–191
 - Positive reinforcement, 180
 - Potatoes, 650–651
 - for breakfasts, 445, 448
 - green, 651
 - Potency, 740
 - Poultry, 570–575
 - classifications of, 570
 - cooking, 577, 579–582
 - cutting up, 572–573
 - evaluating, 571
 - handling and storage of, 575
 - inspection and grading of, 572–573
 - maturity and tenderness of, 571
 - plating, 582
 - quality of, 572
 - for sandwiches, 491
 - storage of, 39–40
 - stuffings for, 582
 - thawing, 573
 - trussing, 574
 - Pound cakes, 755
 - Pour batters, 731
 - Preferment, 713, 714
 - Pregnancy, nutritional needs during, 291
 - Prep cooks, 59
 - Preparation equipment, 231–233
 - Preparation procedure, 331. (*See also* Food preparation)
 - Prepared mustard, 416
 - Preprocessed legumes, 660
 - Preserved vegetables, 651
 - Preset menus, 158
 - Presetting food items, 133
 - Pressure steamers, 237
 - Pressure-frying, 580
 - Pricing, menu, 309, 321–324
 - Primal cut, 589
 - Printed menus, 318
 - Prioritizing, 91
 - Prix fixe menu, 310
 - Probation, 107
 - Processed cheese, 474
 - Processing, 40, 597
 - Produce, 41. (*See also* Fruits; Vegetables)
 - Product name, 331
 - Product yield, 352
 - Production careers, 38–39
 - Production schedule, 181
 - Production space, 183
 - Professional kitchens
 - cooking equipment, 231, 234–239
 - holding equipment, 242–246
 - preparation equipment, 231–233
 - receiving area, 225–229
 - service equipment, 246
 - Professional organizations, 91, 95
 - Profit and loss statements, 175
 - Profitability, 173–177
 - Profits, 70, 74
 - Promotions, 191
 - Proofing cabinets, 682
 - Proofing dough, 719
 - Proofing/holding cabinets, 242, 243
 - Proportion, of plated foods, 315
 - Prosciutto, 479
 - Protective clothing, 26
 - for foodhandlers, 26
 - for safety, 4
 - when working with meat, 595
 - Proteins, 281, 432–441
 - Psychological pricing method, 323
 - Public relations, 191
 - Publicity, 191
 - Puddings, 771–773
 - PUFI mark, 549
 - Pullman loaf, 488
 - Pulse, 660
 - Pumpkin seeds, 418
 - Punching dough, 716–717
 - Puncture wound, 11
 - Purchase orders, 225, 363
 - Purchase quantities, determining, 360, 361
 - Purchasers, 61
 - Purchasing goods, 359–362
 - Purchasing procedures, 176
 - Purée soups, 529–530
 - Purées, 302
- Q**
- Q factor, 355
 - Quality, commitment to, 90
 - Quality control, for standardized recipes, 330
 - Quantity, 330
 - Quenelle, 459
 - Quiches, 439
 - Quick breads, 445
 - biscuit method for, 731–734
 - loaf breads, 739–740
 - methods for making, 730–731
 - muffin method, 737–738, 741–742
 - types of, 730
 - Quick soak, 663
 - Quick-rise dry yeast, 695
 - Quick-service breakfasts, 443
 - Quick-service restaurants, 70, 143
- R**
- Radiation, 234
 - Radicchio, 466
 - Raft, 528
 - Ramekin, 439
 - Range of motion, 223
 - Ranges, 234, 235, 239
 - Rare, 610
 - Raw vegans, 293
 - Raw yield tests, 353
 - RDAs (Recommended Dietary Allowances), 289
 - Reading skills, 88
 - Ready-made breads, 443–445
 - Ready-to-cook poultry, 571
 - Receiving area, 225–229
 - Receiving goods, 38, 362–364
 - Receiving record, 225
 - Receptors, 421
 - Recipe conversion, 335, 337–342
 - Recipe costing form, 354–356
 - Recipes, 330. (*See also* Master recipes)
 - costing, 354–357
 - errors in, 342
 - standardized, 330–333, 335–342, 350–351
 - Recommended Dietary Allowances (RDAs), 289
 - Recondition, 239
 - Record keeping
 - for HACCP, 35–36
 - for profitability, 173
 - for small businesses, 78
 - Recovery time, 386
 - Recycling, 44–45
 - Red pepper, 401
 - Reductions, 391, 513, 518
 - Reel ovens, 684
 - Refrigerated storage, 38, 41
 - Refrigerators, 226, 227, 229
 - Regulations, 198
 - for facility maintenance, 202–203
 - governmental, 198–201
 - Reheating food, 44
 - Rehydration, 642
 - Reliability, as job skill, 89
 - Relish trays, 481
 - Relishes, 416, 520
 - Render, 577

Index

- Repairs, in facilities management, 186
 - Repetitive stress injury, 106
 - Reputation, 116
 - Requisition, 365
 - Research chefs, 60
 - Reservations, 116
 - Resorts, careers in, 71
 - Resources, 91
 - effective use of, 91
 - managing, 171–172
 - Responsibility, as job skill, 88
 - Restaurant managers, 60–61, 607
 - Restaurants
 - careers in, 70–71
 - entrepreneurial opportunities in, 75
 - types of, 142–144
 - Résumés, 96–98
 - Rice, 624–626
 - cooking, 630–632
 - risotto, 631–632
 - Rind, cheese, 472
 - Rings, bakeshop, 686
 - Ripening, 638
 - fruits, 638–639
 - hard cheeses, 471–472
 - soft cheeses, 473, 474
 - vegetables, 647
 - Risk management, 185
 - Risotto, 624, 631–632
 - Risotto method, 631
 - Risotto Milanese, 410
 - Rivet, 252
 - Roasting, 383
 - meats, 606
 - open-spit, 383
 - poultry, 577
 - Roasting pans, 271
 - Roll cut, 255
 - Rolled cookies, 751, 752
 - Rolled fancy sandwiches, 478
 - Rolled-in fat yeast dough, 709–710
 - Rolling pins, 267
 - Rolls
 - for sandwiches, 489
 - yeast rolls, 706–724
 - Rondelle cuts, 255, 257
 - Room service, 144
 - Rosemary, 409
 - Rotating stock, 365
 - Round fish, 542
 - Rounding dough, 717–718
 - Roux, 519, 521, 523–525
 - Rumaki, 503
 - Russian service, 148
 - and flow of food, 38–45
 - and foodhandler cleanliness, 26–29
 - HACCP system for, 31–36
 - with kitchen equipment, 7
 - with knives, 259–260
 - personal injuries, 4–7
 - personal protective clothing, 4
 - in professional kitchens, 229
 - training and certification for, 201
 - working conditions for, 106
- Saffron, 412
 - Sage, 409
 - Salad dressings, 468–469
 - Salad sandwiches, 499
 - Salad service, 133
 - Salads, 463–468
 - green, 464–468
 - on menus, 318–319
 - structure and arrangement of, 463
 - types of, 463
 - Salamanders, 234, 238
 - Sales, profit vs., 176
 - Sales cycle, 360
 - Sales representatives, 61
 - Salmonella, 575
 - Salsas, 416, 520
 - Salt, 400–410, 695
 - Salt and pepper shakers, refilling, 151
 - Sandwiches, 488–494
 - American Grinders, 493
 - bread for, 488–489
 - cold, 499–500
 - fillings for, 484, 491
 - history of, 497
 - as hors d'oeuvres, 478
 - hot, 496–400
 - on menus, 319
 - preparing quantities of, 492
 - spreads for, 488–490
 - types of, 488
 - Sanitary, 14
 - Sanitation, 14–20
 - with cheese handling, 494
 - chemical hazards, 17–19
 - and contamination, 14–17
 - facilities management for, 185
 - and flow of food, 38–45
 - and foodhandler cleanliness, 26–29
 - HACCP system for, 31–36
 - of kitchens, 18–19
 - of knives, 260
 - of pastry bags, 686
 - physical hazards, 20
 - of preparation equipment, 231
 - with raw fish/shellfish, 559
 - Sanitizers, kitchen, 44
 - Saturated fats, 283
 - Sauce espagnole, 519
 - Saucepans, 270
 - Saucepots, 270
 - Sauces, 416, 517–525
 - ingredients for, 517–518
 - for meats, 608
 - mother, 519–522
 - roux for, 521, 523–525
 - storage of, 519
 - thickening, 517–518
 - Sauerkraut, 491
 - Sausage, 432, 435
 - Sauté pans, 270
 - Sautéing, 383
 - fish and shellfish, 560–561
 - fruits, 644
 - meats, 608–609
 - poultry, 580, 581
 - vegetables, 655
 - Savory, 409, 422
 - Scalds, preventing, 5–6
 - Scales, 225, 269, 336, 679, 680
 - Scaling, 679, 714, 761
 - Scallops, 552–553
 - Scones, 445
 - Scoops, 351
 - Scoring, 461
 - Scouring dishes, 45
 - Scrambled eggs, 437, 439
 - Scrubbing dishes, 45
 - Seafood, 556–557. (*See also* Fish; Shellfish)
 - for sandwiches, 491
 - storage of, 39
 - Seams (dough), 718
 - Searing, 383, 579
 - Season, 438
 - Seasonal cuisine, 68
 - Seasonings, defined, 400
 - Seasonings and flavorings, 400–404
 - adding flavorings, 403–404
 - condiments, 416
 - herbs, 406–410
 - lemon, 402
 - for meats, 607–609
 - monosodium glutamate, 402–403
 - nuts and seeds, 417–419
 - onion, 402
 - pepper, 401–402
 - salt, 400–410
 - for sauces, 517
 - sensory evaluation of, 424–426
 - and sensory perception, 421–424
 - spices, 410–414
 - when to season, 403
 - Sections, service, 117–118
 - Seeds, 404, 411–413, 417–419
 - Self-service meals, 149
 - Semi-à la carte menu, 310
 - Semiperishable foods, 360
 - Semisoft cheeses, 472–473
 - Semolina flour, 616
 - Sensory evaluation of meals, 424–426
 - Sensory perception, 421–424, 480
 - Sensory properties, 421
 - Separate-course salads, 463
 - Serrated, 254
 - Servers, 117–118
 - Service careers, 58

S

- Sachet, 406
- Safety, 4–12, 256
 - emergency procedures, 9–12
 - facilities management for, 184–185
 - fire safety, 7–9

- Service equipment, 246
- Service stations, 118
- Serviettes, 155
- Serving food, 43
 - correct hand for, 145
 - customer orders, 131–134
 - guidelines for, 43
 - types of meal service, 144–149
- Sesame seeds, 418
- Sexual harassment, 206
- Shape, in plate composition, 426
- Shaping dough, 718
- Sharp tools, safety guidelines for, 5
- Sheet pans, 686
- Sheeters, 681–682
- Shelf life, 38
- Shellfish, 549–555
 - cooking, 559–563
 - crustaceans, 553–555
 - garnishing, 563–564
 - inspection and grading of, 549
 - mollusks, 550–553
 - plating, 563
 - structure of, 549
- Shelving units, 228, 229
- Sherbet, 771
- Shirred eggs, 439, 440
- Shocking, 11, 390
- Shoes, protective, 4
- Shortening, 689
- Shrimp, 553–554
- Shrinkage, 341, 354
- Shucked, 39
- Side orders, 446
- Side work, 151–154
- Simmering, 390–391
 - eggs, 440–441
 - fruits, 645
 - legumes, 663
 - poultry, 580
 - vegetables, 655
- Single-food hors d'oeuvre, 477
- Single-source buying, 361
- Sinks, commercial, 239
- Skillets, 271
- Skills
 - and available menu items, 309
 - basic, 84–88
 - for customer service, 119–121
 - leadership, 90–92
 - teamwork as, 89, 107
- SkillsUSA, 90–91
- Skimmers, 265
- Slashing dough, 721
- Sleeper, 553
- Slicers (equipment), 231, 232
- Slicers (knives), 234
- Slicing, 255
- Slips, preventing, 4–5
- Small-business career opportunities, 74–78
- Smallwares, 262–274
 - for bakeshops, 684–686
 - cleaning and sanitation of, 274
 - cookware, 262, 270–273
 - hand tools, 262–267
 - measuring equipment, 268–269
- Smoking foods, 382–383, 597
- Smoking point, 300, 580
- Soft cheeses, 473–474
- Soft cookies, 748
- Soft drink machines, 122
- Soft drinks, carbonation in, 123
- Soft medium dough, 708–709
- Soft Rolls, 720
- Soft wheat flour, 688
- Solanine, 650, 651
- Sole proprietorships, 77
- Solid waste, 200
- Sorbet, 771
- Soufflé, 434, 438
- Soufflé omelets, 438, 439
- Soup plates, 622
- Soup service, 133
- Soups, 527–535
 - clear, 527–529
 - international, 531–532
 - on menus, 318
 - presentation of, 532, 534–535
 - specialty, 531
 - storage of, 535
 - thick, 529–530
 - vegetable, 529
- Sous chefs, 59
- Southern Vegetable Soup, 340
- Spatulas, 265, 460
- Speaking skills, 85–86
- Specialty cheeses, 474–475
- Specialty soups, 531
- Specifications, 350, 360, 361
- Spice rubs, 607
- Spices, 401, 404, 410–414, 696
- Spinach, 464
- Spoken menu, 318
- Sponge cakes, 756, 760
- Sponge method, 713, 716
- Spoons, 265
- Spreads, 488–490, 748
- Spring scales, 336
- Springform pan, 686
- Sprinkler systems, 8–9
- Squab, roasting, 577
- Squid, 556
- Stack ovens, 682
- Stainless steel, 252
- Staling, 689, 723, 724
- Standardized accounting practices, 173
- Standardized recipes, 330–333
 - converting, 337–342
 - for cost control, 350–351
 - measurements in, 335–337
 - parts of, 331, 333
- Standards, 198
 - of conduct, 180–181
 - for facility maintenance, 202–203
 - industry, 198
- Starches
 - in pasta, 622
 - for sauce thickening, 518
- Starter, bread, 706
- State regulations, 201
- Station cooks, 59
- Stations, service, 117–118
- Steak (beef), 432, 435
- Steak (fish), 544
- Steak sauce, 416
- Steam
 - baking with, 722
 - as leavening agent, 694
- Steam tables, 242, 243
- Steamers, 236–237
- Steaming foods, 299, 391–392
 - fish and shellfish, 560
 - grains, 630–631
 - vegetables, 655
- Steam-jacketed kettles, 237
- Stewing, 393, 394, 609
- Stimuli, 421
- Stir-frying, 299, 383–384
- Stirred custard, 772
- Stockpots, 270
- Stocks, 510–515
 - brown, 511, 513
 - commercial bases, 510
 - cooling and storing, 514–515
 - elements of, 510
 - fish, 513
 - glazes, 513–514
 - vegetable, 513
 - white, 511, 512
- Storage, 38–42
 - of cakes, 762
 - of cheese, 475
 - of clean dishes, 46
 - of condiments, 416
 - of desserts, 774
 - of fish, 545, 546
 - of fruits, 638–639, 642
 - of herbs, 409–410
 - of knives, 260
 - of legumes, 660, 664
 - of meats, 591–593, 599
 - of nuts and seeds, 418
 - of pasta, 616, 619
 - of pies, 769
 - of poultry, 575
 - preventing nutrient loss during, 299–300
 - in professional kitchens, 225–229
 - of received goods, 365
 - of rice, 625
 - of sauces, 519
 - of shellfish, 550–555
 - of soups, 535
 - of stocks, 514–515
 - of vegetables, 647, 650, 651
 - of yeast breads and rolls, 724
- Straight dough method, 713
- Strainers, 266

Index

- Strains, preventing, 6
 - Streusel, 741
 - Stuffing pasta, 621–622
 - Stuffings, 582
 - Sugar bowls, refilling, 152
 - Sugars, for baking, 691
 - Sundae, 774
 - Sunflower seeds, 418
 - Superfine sugar, 691
 - Surimi, 556
 - Sushi, 559
 - Sweating, 528
 - Swedish meatballs, 503
 - Sweet and Spicy Broccoli, 656
 - Sweet rich doughs, 709
 - Sweeteners, for baking, 691, 693
 - Swiss meringue, 763
- T**
- Table d'hôte menu, 310
 - Table setting, 156–158
 - Table tent menus, 318
 - Tablecloths, changing, 157
 - Tableside food preparation, 146, 147
 - Tableware choices, 152, 155
 - Tang, 252
 - Tank system (soft drinks), 122
 - Target customers, menu planning for, 308
 - Target market, 189
 - Tarragon, 409
 - Tart pans, 686
 - Tartar sauce, 563
 - Taste buds, 422
 - Tastes, sensory perception of, 422
 - Tea-making equipment, 124–125
 - Teamwork
 - as job skill, 89, 107
 - as service staff skill, 120
 - Technology, effective use of, 92
 - Teenagers, nutritional needs of, 292
 - Telephone calls, in job search, 96
 - Telephone skills, 86
 - Temperature
 - cooking, for converted recipes, 341
 - danger zone for holding foods, 33–34
 - internal, 34
 - in plate composition, 426
 - sensory evaluation of, 424–425
 - thermometers, 34–35
 - Texture
 - cooking and, 377–378
 - in plate composition, 426
 - sensory evaluation of, 424–425
 - sensory perception of, 423–424
 - Thawing foods
 - fish, 546
 - poultry, 573
 - Theme restaurants, 142
 - Thermometers, 225
 - Thick soups, 529–530
 - Thickening
 - saucers, 517–518
 - science of, 518
 - Thickening agent, 517
 - Thyme, 409
 - Tilting skillets, 236
 - Time management, 171, 223
 - Tips, 109, 135, 136
 - Toast, for breakfasts, 445
 - Tomato corers, 263
 - Tomato sauce, 519
 - Tomatoes, 515
 - Tongs, 265
 - Tools
 - for baking and pastry, 685
 - for garnishes, 460
 - hand, 262–267
 - for portioning, 351
 - Torpedo roll, 489
 - Tortillas, 489
 - Total weight as served, 354
 - Total yield recipe conversion method, 337–338
 - Tournée, 461
 - Tournée knife, 254, 460, 461
 - Toxin, 14
 - Trace minerals, 285
 - Trade publications, 95
 - Traffic paths, 183
 - Translucent, 422
 - Tray service, 131
 - Tray stands, 131–132
 - Trayline service, 143
 - Trends, 68
 - in eating, menu items and, 309–310
 - investigating, 190
 - Trichinosis, 609
 - Trim, 352
 - Trim loss, 353
 - Triple-decker sandwiches, 488
 - Trueing, 260
 - Trunion kettles, 237
 - Trussing poultry, 574, 575
 - Truth-in-menu guideline, 315, 316
 - Tube pans, 273
 - Tubers, 647
 - Tuile, 751
 - Tunnels, 739
 - Turbinado sugar, 691
 - Turkey, 570
 - carving, 578
 - roasting, 577
 - Turnover rate, 182–183
 - 240 Factor, 715
- U**
- Underliner, 133
 - Uniforms, 119
 - Unit costs, 351–352
 - United States Department of Agriculture (USDA), 198–199, 290
 - Univalves, 550
- V**
- Vacuum packed, 546
 - Vanilla Chiffon Genoise, 757
 - Variety, on menus, 314
 - Veal, 599–600
 - Vegans, 293
 - Vegetable brushes, 267
 - Vegetable peelers, 263, 460
 - Vegetable purées, 490, 518
 - Vegetable soups, 529
 - Vegetable stock, 513
 - Vegetables, 647–657
 - canned, 651–652
 - classifications of, 647–649
 - cooking, 652–653, 655, 657
 - dried, 652
 - fresh, 647
 - frozen, 652
 - frozen foods, 652
 - as garnishes, 459–461
 - garnishing, 657
 - grading of, 647
 - plating, 657
 - preserved, 651
 - purchasing and storing, 647, 650, 651
 - ripening, 647
 - salad greens, 464–468
 - Vegetarians, 293
 - Veined cheese, 472
 - Velouté, 519–520
 - Vending machines, 143
 - Vendors, 61, 362
 - Verbal communication, 120, 121
 - Verification (HACCP system), 36
 - Vichyssoise, 531
 - Vinaigrettes, 468
 - Vinegar, 416
 - Violations, 198
 - Viruses, 16
 - Vitamins, 285
 - fat-soluble, 284
 - water-soluble, 283, 284
 - Volume, 262
 - Volume measures, 269, 336
- W**
- Waffle irons, 446
 - Waffles, 445–446
 - Wage laws, 207
 - Wages, 108–110
 - Walls, 202, 741
 - Walnuts, 418
 - Warped, 753
 - Washing dough, 719, 721, 723

Waste control, 174–175, 366
Waste disposal, 44–45
Water
 in baking, 689
 and sensory perception of foods, 425
Water service, 128, 286
Waters, Alice, 68
Water-soluble vitamins, 283, 284
Waxy potato, 650
Weighing, 84
Weight, 262, 335, 336
Weight loss, nutritional needs during, 295
Wet cure, 457
Wheat, 627, 629–630
Wheat flour, 688–689
Whetstone, 259
Whey, 471
Whisks, 264
White pepper, 401
White rice, 625
White stock, 511, 512
Wiley, Harvey W., 200
Woks, 271, 383
Work, trends in, 69
Work areas, layout of, 183
Work ethic, 88–90
Work flow, 220–223
Work schedules, 181
Work sections, 220, 221
Work simplification, 222
Work stations, 220
Work tables, 233
Workers' compensation, 106, 207
Workplace injuries/deaths, 207
Wounds
 first aid for, 11
 of foodhandlers, 29
Wraps, 488
Writing skills, 87–88

Y

Yeast, 694–695
Yeast breads and rolls, 706–724
 baking, 721–723
 cooling, 723
 dough preparation, 713–714
 glazing, 723
 hard lean doughs, 708
 origin of yeast doughs, 709
 packaging, 724
 rolled-in fat doughs, 709–711
 soft medium and rolls, 708–709
 stages of making dough, 714–719, 721
 staling prevention, 723, 724
 storage, 724
 sweet rich doughs, 709
 troubleshooting, 724
 yeast dough ingredients, 706–707
Yield, 331, 352

Yield grade (meats), 591
Yield percentages, 352–354
Yield tests, 352, 361–362
Yield weight, 353
Yogurt, frozen, 771

Z

Zest, 402
Zesters, 264, 460
Zoning, 78

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