



Chapter **5**  
**Kitchen Essentials 2—  
Equipment and Techniques**

## Case Study *Working in the Kitchen*

Now that Alex has been trained on food safety and workplace safety, it is time for Chef Jean to train him on the kitchen's cooking equipment and cooking techniques. Alex is attending culinary school, so he has experience with some of the cooking equipment.

Chef Jean is teaching Alex the correct names and uses of each piece of equipment. As he does this, he is also showing Alex the proper cooking techniques for each piece of equipment. Finally, Chef Jean shows Alex how to properly care for and maintain the equipment.

Alex, though, is having difficulty understanding why certain techniques are only appropriate for specific pieces of equipment—especially when it comes to knives and small hand tools. For instance, he has run into trouble using the wrong knife to cut up meat for a stew.

As you read this chapter, think about the following questions:

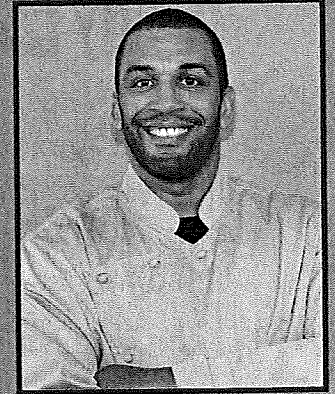
1. How can Alex demonstrate to Chef Jean that he understands how to use and maintain kitchen equipment properly?
2. How can Chef Jean ensure that Alex can follow proper cooking techniques without sacrificing the quality of customer food?
3. Why is it important for Alex to use the correct cooking equipment when preparing food?
4. How much time should Chef Jean give Alex to learn all this new information?



## Benjamin Gordon Jr.

“Chef Benny”

*Chef and Owner of Gordon Foods*



With two parents who loved to cook, it was natural for me to develop an affinity for food at an early age. As a teenager, I was already working in restaurants—washing dishes or cleaning the floors—just to be near a professional kitchen. It didn't take long before I decided that not only did I want to cook, but I also wanted to own a restaurant.

After completing high school, I attended the Baltimore International Culinary Arts Institute (now the Baltimore International College), graduating in 1983.

With the help of my parents, I opened my first restaurant at the age of 21. Restaurant 2110, serving country French cuisine, soon became the talk of the town, frequently being featured in local and national publications. In addition to my local clientele, I prepared meals for celebrities such as Oprah Winfrey, Patti LaBelle, Martha Stewart, Ruby Dee, Tina Turner, Richard Dreyfuss, Charles “Rock” Dutton, Rachelle Ferrell, Will and Jada Pinkett-Smith, and Baltimore's former Governor, William Donald Schaefer. I later opened Chez Charles, which offered nouvelle French cuisine, and Benny's Jazz Club, a Cajun restaurant.

I became the Chef of the Baltimore Convention Center, teaching and cooking for thousands of guests from all over the country. And I was the youngest chef and restaurateur to be nominated and accepted to membership of the *Chaine Des Rotisseurs*, an international gourmet society. Currently, I serve as the official Chef for the Black Professional Men, Inc., in Baltimore.

As a former national spokesperson for Lawry's Seasonings, I have gone from local chef to a media celebrity. Now, I own Gordon Foods, which provides catering services, consulting services, systems development, and classes.

But it's most important to give back. I now spend a great deal of time mentoring high school students who are interested in the hospitality industry. In fact, I chose this industry because of my passion for food and the ability it has given me to help people. Food has been my window to the world. I believe that proper *mise en place* is the basis for all areas of life, not just cooking. It enables you to achieve a higher level of success.

Remember:

“Keep your *mise en place* in order.”

*In July of 2004, Benny was cutting down a tree for a member of his family when the chain saw kicked back and severed his left arm. The chances of living, much less saving his arm, were slim. He was blessed to have skilled*

doctors who saved his arm and his life. Benny notes that this “blessing” helped him to look at life in a different way. He still has his “dream,” but now it has more purpose. The phrase “I can do that with one hand tied behind my back” has a newfound meaning for him. Benny says that he has raised the level of what he does, because he lives that blessing every day.

### About Kitchen Essentials 2—Equipment and Techniques

You can't be the best at what you do without understanding the tools and techniques of your trade. So be sure you understand the following:

- Knife skills are the foundation of cooking.
- *Mise en place* is the most important element of cooking.
- Part of *mise en place* is determining which cooking method to use for each food. Choosing the correct or incorrect method can greatly impact a meal.
- Nutrition is the foundation of life. If you don't have proper nutrition, you cannot learn, think, heal, love, or enjoy life to the fullest.

#### 5.1 Foodservice Equipment

- Receiving and storage equipment
- Pre-preparation equipment
- Food-preparation equipment
- Holding and serving equipment

#### 5.2 Getting Ready to Cook

- *Mise en place*
- Knife basics
- Seasoning and flavoring
- Pre-preparation techniques

#### 5.3 Cooking Methods

- Heat transfer
- Dry-heat cooking methods
- Moist-heat cooking methods
- Combination-cooking methods
- Other cooking methods
- Determining doneness

#### 5.4 Cooking and Nutrition

- Healthy diets
- Dietary guidelines for Americans
- MyPyramid
- Nutrition labels
- The problem of obesity

## SECTION 5.1 FOODSERVICE EQUIPMENT

Of course, every restaurant and foodservice operation requires equipment. Some of the equipment is common to most kitchens, while some is unique to the operation. Equipment needs depend on many elements, such as the size of the kitchen, number of customers served, food items offered on the menu, and style of service.

This section introduces many of the tools and equipment typically found in a professional kitchen. Items are divided into categories according to their function: knives, smallwares, measuring and portioning devices, cookware, strainers and sieves, food prep, and storage containers.

## Study Questions

After studying Section 5.1, you should be able to answer the following questions:

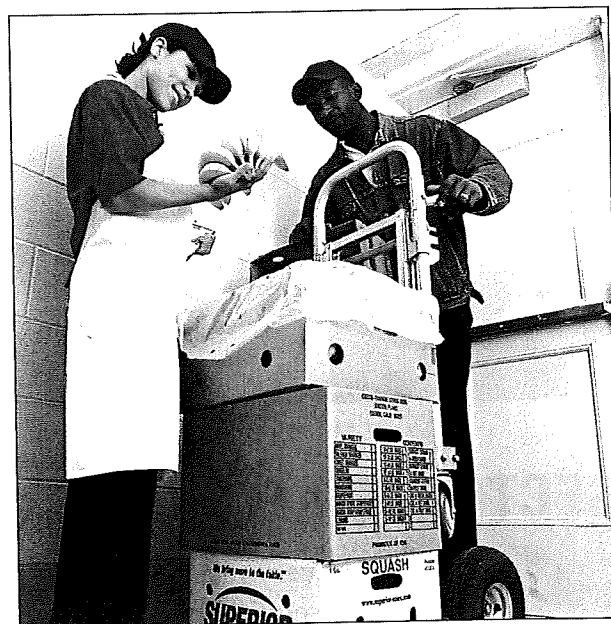
- What equipment is needed for receiving and storing food and supplies?
- What equipment is needed for pre-preparation?
- What are the basic types of pots and pans and their common uses?
- What types of preparation equipment are used in the foodservice kitchen?
- What equipment is needed for holding and serving food and beverages?

## Receiving and Storage Equipment

### Receiving Food

The receiving area is the first stop in the flow of food. It is here that all food deliveries enter the restaurant or foodservice operation. Before accepting the product, an employee checks the quality and quantity of the items ordered against those being delivered. This can be accomplished using several pieces of equipment found in the receiving area:

- **Receiving table/area:** Employees weigh, inspect, and check delivered items on a receiving table or in a receiving area. See Figure 5.1.
- **Scales:** Employees weigh items using a scale to confirm that what was ordered matches what is delivered.
- **Utility carts:** Carts of durable injection, molded shelving, or heavy steel are used to carry food cases to storage areas. Chutes, conveyors, dollies, dumb-waiters, and elevators are all used to move food and supplies from one area of the operation to another.

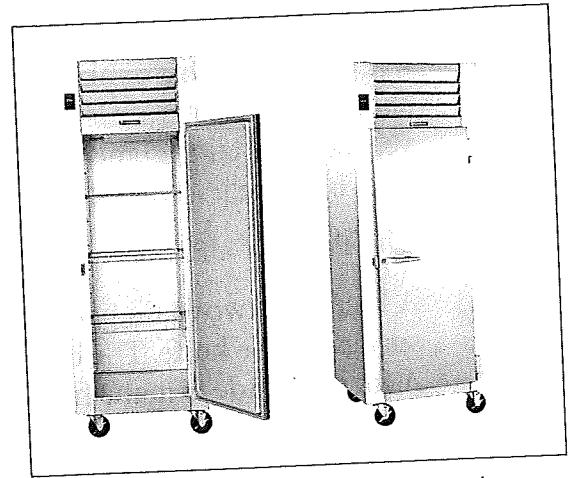


**Figure 5.1:** When deliveries are received, they are inspected for quality and quantity.

## Storing Food

After food is delivered and received into the receiving area, it must be stored properly. Dry goods such as flour, sugar, and grains must be stored at least 6 inches off the floor on stainless steel shelving. Figure 5.2 shows refrigeration equipment. Perishable goods such as dairy products, meat, and fresh fruits and vegetables are stored in refrigerators and freezers:

- **Shelving:** Shelving in storage areas should be made of stainless steel. Operations use stainless steel instead of wood because wood is difficult to keep clean and is not acceptable to many local health departments. Stainless steel shelves are very strong and easy to clean.
- **Refrigerators and freezers:** There are two basic types of refrigerators and freezers. A **walk-in refrigerator** or **walk-in freezer** (often called a “walk-in”) is built right into the foodservice facility itself. A **reach-in refrigerator** or **reach-in freezer** can have one, two, or three internal compartments. A reach-in might have full-sized doors or half doors, windows in the doors, or doors on both sides of the freezer. Some have wheels so that they can be used in different areas of the kitchen. There are also roll-in, display, on-site, and portable refrigerators and freezers. All refrigerators must maintain temperatures between 32°F and 41°F. Freezers should maintain temperatures of 10°F to -10°F.



**Figure 5.2:** Reach-in refrigerators and freezers have full-sized doors or half doors.

## Pre-preparation Equipment

There are many types of pre-preparation equipment used in restaurant and foodservice operations, including those in the following categories:

- Knives
- Hand tools and small equipment
- Measuring utensils
- Pots and pans



## Knives

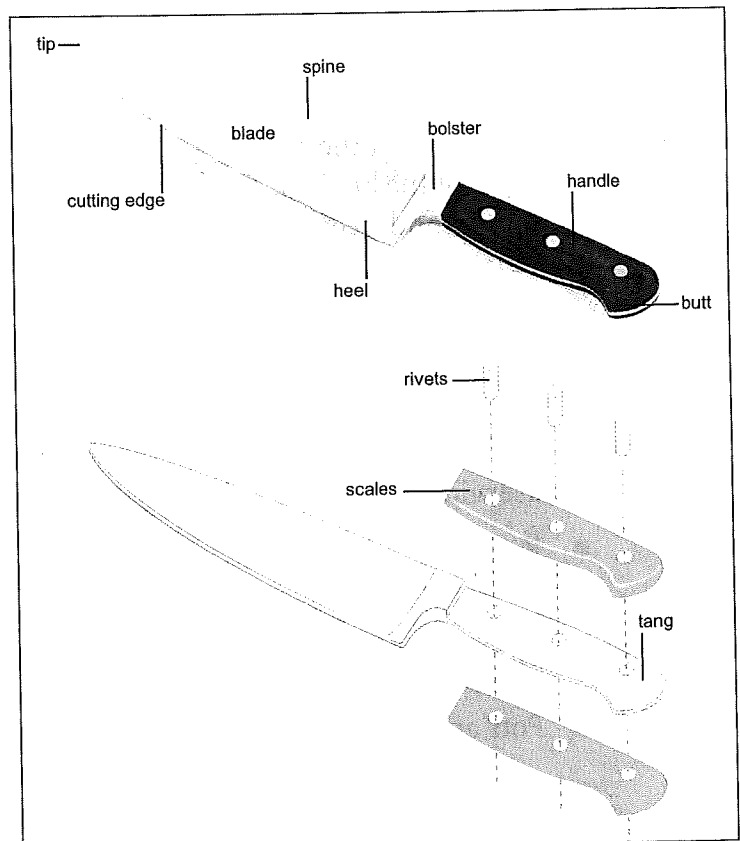
Knives are the most widely used pieces of kitchen equipment. Foodhandlers use knives in most cooking preparations, from slicing to chopping to shredding. Each knife is designed for a specific purpose, such as paring a vegetable or cutting meat from the bone. A good knife is made of stainless steel because it is very durable and stays sharp for a long time.

### The Parts of a Knife

A knife has two main parts, the blade and the handle. The **blade** is the cutting surface of the knife. The blade is made of metal and is either forged or stamped. A **forged blade** is made from a single piece of heated metal that is dropped into a mold and then struck with a hammer and pounded into the correct shape. A **stamped blade** is made by cutting blade-shaped pieces from sheets of milled steel. Figure 5.3 identifies the different parts of a knife.

The blade of the knife has several parts:

- **Tip:** Cooks use the tip for detailed work such as paring, trimming, and peeling.
- **Cutting edge:** The cutting edge is located along the bottom of the blade between the tip and the heel. Use it for slicing, carving, and making precision cuts. The cutting edge can be **flat ground** and **tapered** (both sides of the blade taper smoothly to a narrow V-shape), **ser-rated** (shaped into a row of teeth that can be set very closely or widely apart), **hollow ground** (sides of the blade near the edge are ground away to form a hollow, making the blade extremely sharp), **granton** (ovals are ground into the sides of the blade, which helps food to release easily), and **single side** (edge is on just one side).



**Figure 5.3:** Parts of a knife.

- **Spine:** The top of the blade is the spine and is the noncutting edge of the blade.
- **Heel:** The heel is the widest and thickest part of the blade. Use the heel to cut through large, tough, or hard foods.
- **Bolster:** The bolster is located at the heel of the blade. It is where the blade meets the handle.
- **Tang:** The tang is the metal that continues from the blade through the handle. A full tang is as long as the whole knife handle. Chef's knives and cleavers have full tangs. Some knives have partial tangs and are used for lighter work such as paring or bread knives.
- **Scales:** The scales are the part of the knife that creates the handle.
- **Rivets:** The rivets hold the handle to the tang.
- **Handle:** The handle is made with various materials, including hardwoods or textured metal.
- **Butt:** The butt is the end of the handle.

### Types of Knives

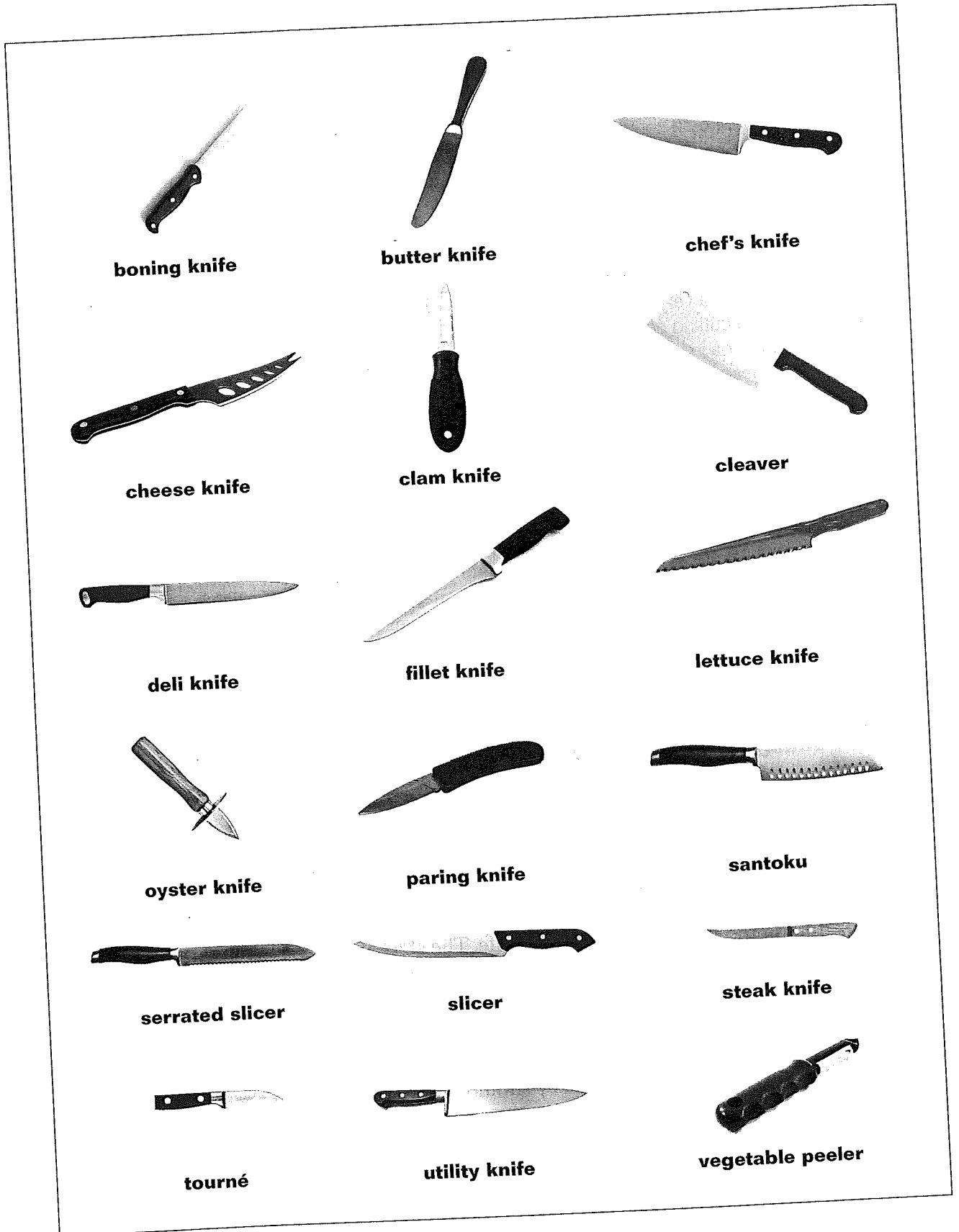
There are many types of knives:

- **Boning knife:** Foodhandlers and cooks in the butchering area use this 6-inch knife to separate raw meat from the bone. The blade is thin, flexible, and shorter than the blade of a chef's knife.
- **Butcher knife:** Also known as a scimitar, cooks use the butcher knife to fabricate raw meat. It is available with 6- to 14-inch blades.
- **Butter knife:** Use this small knife with a blunt-edge blade to spread butter, peanut butter, and cream cheese on bread or dinner rolls.
- **Chef's (French) knife:** This is an all-purpose knife for chopping, slicing, and mincing all types of foods. Its blade is normally 8 to 14 inches long and tapers to a point at the tip.
- **Cheese knife:** Cooks use this thinly shaped utensil to cut through hard or soft-textured cheese.
- **Clam knife:** Use this short, blunt-point knife to shuck, or open, clams. Unlike the oyster knife, it has a very sharp edge.
- **Cleaver:** Use this heavy, rectangular knife to chop all kinds of food, from vegetables to meat. It is also able to cut through bones.



- **Deli knife:** Use the deli knife for thick sandwiches. The blade is serrated, which allows the knife to easily release. The most common deli knife is 8 inches.
- **Fillet knife:** A fillet knife is a thin, flexible blade for cutting fish fillets. It is a short knife, about 6 inches long.
- **Lettuce knife:** This is a plastic serrated knife designed to cut lettuce without causing the edges of the lettuce to turn brown.
- **Oyster knife:** An oyster knife is a short, stubby knife with a pointed tip for shucking oysters.
- **Paring knife:** Use the paring knife to trim and pare vegetables and fruits. It is a small knife with a sharp blade, only 2 to 4 inches long.
- **Santoku:** A santoku is a general-purpose kitchen knife with a 5- to 7-inch blade length. The santoku knife is designed for a comfortable, well-balanced grip, while allowing for full blade use.
- **Scimitar (SIM-ah-tahr):** A scimitar, also known as a butcher knife, is a long, curved blade; use it for cutting through large cuts of raw meat.
- **Serrated slicer:** Use this knife with a long, thin serrated blade to slice breads and cakes.
- **Slicer:** Cooks use this knife for slicing cooked meats; its blade can be as long as 14 inches.
- **Steak knife:** Use this curved knife for cutting beef steaks from the loin.
- **Tourné (tour-NAY):** Similar to a paring knife, this knife has a curved blade for cutting the curved surfaces of vegetables.
- **Utility knife:** An all-purpose knife used for cutting fruits, vegetables, and some meats, this knife's blade ranges from 6 to 8 inches long.
- **Vegetable peeler:** This is not technically a knife, but it has sharp edges for peeling potatoes, carrots, and other vegetables.

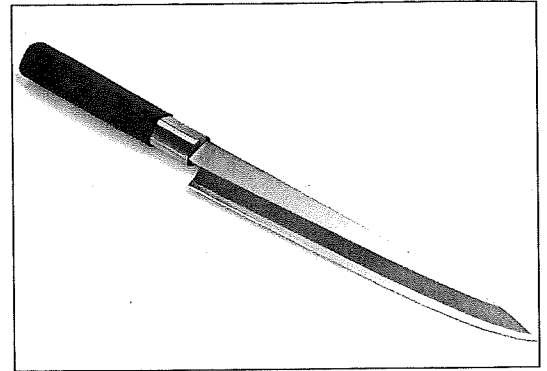
Figure 5.4 shows the different types of knives.



**Figure 5.4:** Types of knives.

### New Knives

Japanese-style knives are becoming increasingly popular in American kitchens, both for home cooks and professional chefs. See Figure 5.5. Unlike the typical Western knife, which is sharpened on both sides of the edge of the blade, a Japanese knife is often sharpened along only one side. Japanese knives are sharpened at a more acute angle than are Western knives. They have a very hard temper, meaning that the cutting edge will stay extremely sharp for a long period of time. Usually, Japanese knives are made from high-carbon steel or from a mixture of high-carbon steel and iron. A number of brands are now available in the United States.



**Figure 5.5:** A Japanese knife is often sharpened along only one side.

Ceramic knives are also gaining in popularity. These knives are actually made of ceramic. This means they are extremely sharp, but also extremely fragile. Dropping the knife or using it to cut something hard can cause the blade to shatter. While they cannot be sharpened at home, most manufacturers will sharpen ceramic knives for a fee. The knives do not need to be sharpened often; once every year or two may suffice, depending on how vigorously they are used. These knives are excellent for slicing, peeling, and cutting, but are not well suited to heavy chopping or working with hard foods.

### Knife Care

**Honing** is the regular maintenance required to keep knives in the best shape. Chefs keep their knives sharp by using a sharpening stone and a steel. A **sharpening stone** is used to grind and hone the edges of steel tools and implements. A **steel** is a long metal rod that is lightly grooved and magnetized. It removes the microscopic burrs that are created as a knife is used. These burrs create drag, dulling the slicing ability of the knife. The steel also helps to return the blade to the convex shape that exists on a sharp blade. This shape is flattened as the knife is used. **Ceramic steels** are slender ceramic rods embedded in a wooden handle. They are used both on ceramic and metal knives to hone sharpened knives. **Diamond steels** are slender metal rods, or sometimes flattened rods, that are impregnated with diamond dust. They should not be used to hone ceramic knives. Because of the diamond material, they can produce extremely sharp edges, as do the ceramic steels. A **honing steel** looks like a short sword with a round blade that helps remove broken pieces and realign the remaining ground edges.

Sharpening removes metal from the blade. It is only done when a knife is so dull that it cannot be brought back to a sharp edge with the steel. The knife

blade is held at a 20-degree angle to a sharpening stone. The blade is then passed across the oiled or watered stone an equal number of times on each side until the desired sharpness is achieved. Often sharpening stone units hold three stones. These range from coarse to very fine and allow the blade to be smoothed as the process is finished.

To properly care for knives, follow these guidelines:

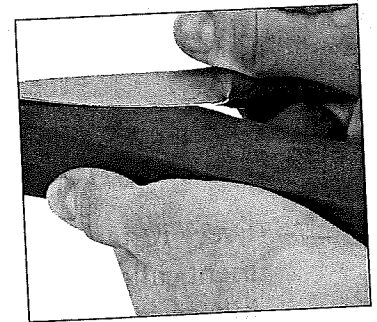
- Keep knives sharpened. A sharp blade cuts more evenly and with less force than a dull blade, so it is safer.
- Use a knife only for its intended purpose.
- Keep the handle of the knife clean and dry.
- Never leave knives soaking under water. Clean the knife immediately and return it to its proper storage place.
- Never talk or point with a knife.
- Never distract others who are using knives.
- If a knife is dropped, jump back and allow it to fall. Do not try to catch it.
- Store knives in knife kits, racks, or sheaths.
- Never hand someone a knife. Put the knife on the counter and let the other person pick it up.

## Essential Skills

### *Knife Sharpening and Steeling*

A sharp knife is a safe knife, so it's critical to sharpen your knives regularly. Follow this process to ensure that knives stay as sharp as possible.

- ① Collect the knives to be sharpened, a sharpening stone, mineral oil or water, a damp cloth or rubber mat, and a steel.
- ② Place your stone on the cloth or mat so it does not slip.
- ③ Carefully lubricate the entire surface of the stone with either mineral oil or cool water (always use the same lubricant on a stone).
- ④ Holding the knife at a 20-degree angle, carefully run the blade across the coarsest surface of the stone; repeat as necessary, with an equal number of strokes on each side of the blade. See Figure 5.6a.



**Figure 5.6a:** Step 4—Hold the knife at a 20-degree angle, and run the blade across the stone.