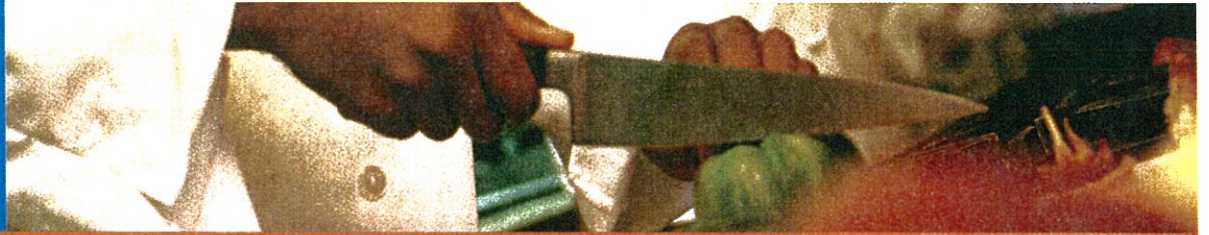


4.1



Using Knives

READING PREVIEW

Key Concepts

- Identifying parts of a knife
- Selecting the appropriate knife
- Using a knife properly
- Making the cut
- Maintaining knives

Vocabulary

- bâtonnet
- bolster
- boning knife
- brunoise
- chef's knife
- chiffonade
- cube
- diagonal cut
- dice
- fermière
- filleting knife
- flat edge
- forged blade
- gaufrette
- granton edge
- grit
- heel (of blade)
- hollow-ground edge
- honing
- julienne
- lozenge cut
- mandoline
- meat cleaver
- oblique cut
- paring knife
- paysanne
- rivets
- rondelles
- santoku knife
- scimitar
- serrated edge
- slicer
- spine (of blade)
- stamped blade
- steel
- tang
- taper-ground edge
- tempering
- tournée knife
- trueing
- utility knife
- vegetable cleaver
- whetstone

Identifying Parts of a Knife

Probably no other kitchen tool is as important to a chef as a knife. To use this important tool well, a chef must know how each knife is constructed as well as how to use the knife properly. A chef must know about the wide variety of knives, each designed for a specific task. A chef must know how to make the cuts that are required for particular dishes. Finally, a chef has to know how to maintain a knife.

A knife has several parts—each of which determines how the knife feels in the chef's hand, how it is best used, and how long the knife will last.

The Blade The blade is the cutting surface of the knife. The blade of a high-quality professional knife is made of a single piece of metal that has been forged or stamped into its desired shape. A **forged blade** is made from a single piece of heated metal that is dropped into a mold and then pounded and cut into shape. A



Source: Culinary Institute of America



Chef's Tip

Try Before You Buy

Before you buy a knife, try it. Feel the knife's overall balance. Check to see that the contour of the handle fits your hand comfortably. Try to get a sense of how well suited it is for your specific tasks.



Hollow-ground edge



Taper-ground edge



Flat edge

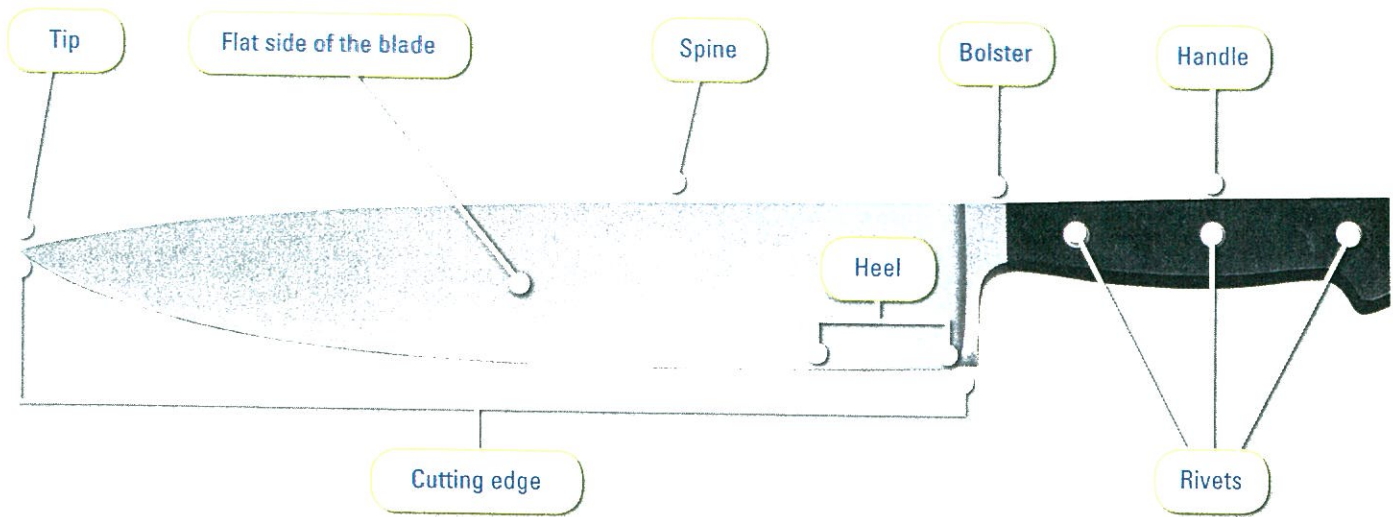
stamped blade is made by cutting blade-shaped pieces from sheets of previously milled steel.

After a steel knife blade is shaped, it is put through a procedure known as tempering. The **tempering** procedure calls for the blade to be heated and then cooled several times. Tempering is done to ensure that the blade will be properly hardened and will not become brittle. If a knife blade becomes very hot (for instance, if it is left in a flame or in a very hot oven) the blade is said to have *come out of temper*. A blade that has come out of temper may be brittle and may shatter.

Blades are usually made of stainless-steel or high-carbon stainless steel, but modern knives sometimes use ceramic material or titanium. Stainless-steel blades are very hard and durable. They are made of chromium and carbon steel. They don't rust or discolor but are hard to sharpen. High-carbon stainless-steel blades are a mix of iron, carbon, chromium, and other metals. Ceramic blades are produced by heating ceramic powder until the particles adhere to each other to form a solid blade. Ceramic blades are harder than steel blades. This means that they will hold their edge longer than steel blades, but because they are so hard, they may need to be returned to the manufacturer for sharpening when they become dull. It is difficult if not impossible to properly sharpen them using a typical sharpening stone.

The blade of the chef's knife has several distinct parts:

- **Tip.** Used for fine work, paring, trimming, and peeling. The tip can also be used to core fruits and vegetables or to score items so they will marinate or cook more evenly.
- **Cutting Edge.** Used for slicing, carving, and making precision cuts. The most common type of cutting edge for general use is a **taper-ground edge**, in which both sides of the blade taper smoothly to a narrow V shape. A **hollow-ground edge** has a thinner, sharper blade with more metal removed. The edges are less durable than taper-ground blades. If the angle is on only one side of the blade it is known as a **flat edge**. This type of edge is typical of many Japanese-style knives.
- **Heel.** Used for cutting tasks that require some force, such as chopping through the joints of a chicken. The **heel** of the blade is the widest and thickest point of the blade.
- **Bolster.** Located at the heel of the blade, at the point where the blade and handle come together. The **bolster** gives the blade greater strength and durability.
- **Spine.** The noncutting edge of the blade is called the **spine** of the knife.
- **Flat Side of the Blade.** Used to crush ingredients such as garlic or spices.



The Tang The **tang** is the continuation of the blade into the knife's handle. Tangs can be either full or partial. A full tang is as long as the whole knife handle and is considered the most durable. Knives used for heavy work, such as chef's knives and cleavers, should have a full tang. Knives used for lighter work may have a partial tang that does not run the entire length of the handle. A *rat-tail tang* is long and narrow. Rat-tail tangs are completely covered by the handle and are not secured to it with rivets.

The Handle Knife handles are made of various materials, including hard woods with very tight grain, such as walnut and rosewood; textured metal; and composite materials. Some are cushioned to make long hours of work less fatiguing.

Wooden handles are attached to the blades with **rivets**. If rivets are visible on the handle (they aren't always), they should lie flush with the surface of the handle to prevent irritation to the hand and to avoid creating pockets where microorganisms could gather. Composite handles are molded onto the tang.

Because you will be holding your knife for extended periods, be sure the material and the shape of the handle feel comfortable in your hand. Many manufacturers offer a range of handle sizes.

FIGURE 4-1

Different Types of Tangs

The knife on the left has a partial tang; the knife on the right has a full tang.

DRAWING CONCLUSIONS Why would a knife with a full tang be used for heavy work?

Source: Culinary Institute of America

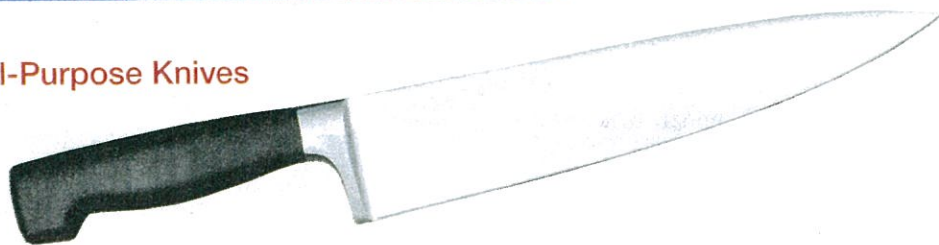


READING CHECKPOINT

What are the main parts of a knife?

Types of Knives

All-Purpose Knives



A **chef's knife** (also known as a *French knife*) is the most-used knife. This all-purpose knife, with an 8- to 12-inch triangular blade, can be used for peeling, trimming, slicing, chopping, and dicing. A skilled chef can also use this knife to cut large foods into smaller pieces. A good quality chef's knife should be well balanced, with the weight of the blade equal to the weight of the handle.

Source: Culinary Institute of America



A **santoku** (san-TOE-ko) **knife** is a general-purpose knife that originated in Japan. It has become popular in kitchens around the world.

Unlike a chef's knife, the edge of the blade curves down toward the tip. It may be ground with a flat edge, rather than taper-ground like many European-style knives. Santoku knives are used for slicing, chopping, and mincing foods.

Source: Pell Studio/Shutterstock

Utility Knife



A **utility knife** is a smaller and lighter version of a chef's knife, with a 5- to 7-inch blade. It is used for light cutting, slicing, and peeling.

Source: Culinary Institute of America

Paring Knives



A **paring** (PAIR-ing) **knife** is the second most frequently used knife. It has a 2- to 4-inch blade and is used mainly for peeling and trimming fruits and vegetables.

Source: Culinary Institute of America



A **tournée** (TOUR-nay) **knife** is a type of paring knife with a curved blade, making cutting rounded surfaces easier. It is also known as a *bird's-beak knife*.

Source: Culinary Institute of America

Boning Knife



A **boning knife** is used to separate raw meat from the bone. The blade is usually about 6 inches long and is thinner than the blade of a chef's knife. The narrow blade allows you to work around bones, between muscles, and under gristle. Some boning knives have an upward curve; others are straight.

Source: Culinary Institute of America

Filleting Knife



A **filleting** (fill-AY-ing) **knife** is specially designed for filleting fish. It has a very flexible blade.

Source: Culinary Institute of America

Selecting the Appropriate Knife

There are almost as many types of knives as there are types of food. Each aspect of a knife—the length and flexibility of the blade, the type of cutting edge, the strength of construction—is designed for a specific task.

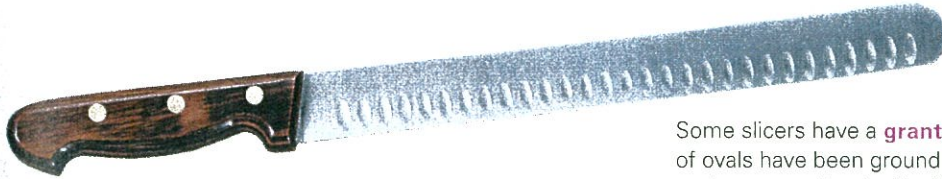
Slicers



A **slicer** has a long thin blade with a rounded or pointed tip. It is used to make smooth slices in a single stroke. The blade may be flexible or rigid.
Source: Culinary Institute of America

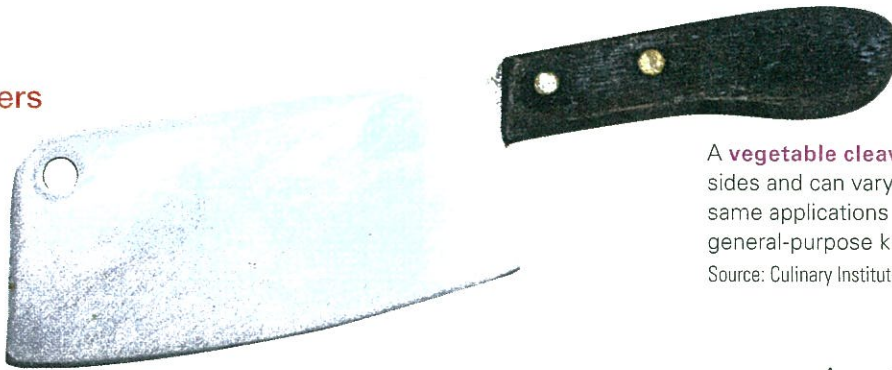


Some slicers have a **serrated** (SER-ay-ted) **edge**—a row of teeth that make it easy to slice foods with a crust or firm skin.
Source: Dave King/Dorling Kindersely Limited

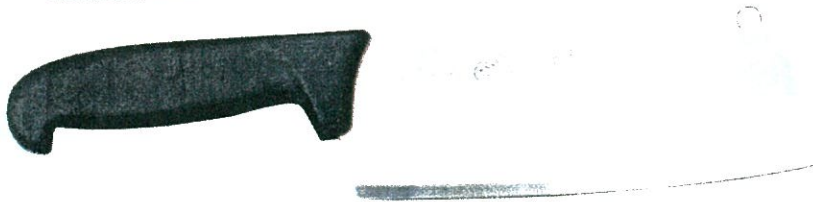


Some slicers have a **granton** (GRAN-ton) **edge**, which means that a series of ovals have been ground along the edge of the blade. Smoked salmon or moist meats sliced with this knife will not stick to the blade.
Source: Culinary Institute of America

Cleavers

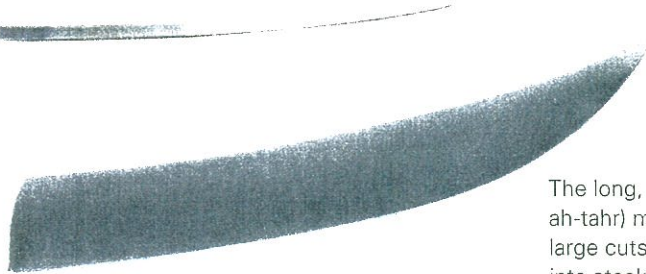


A **vegetable cleaver** has a rectangular blade with straight sides and can vary in size. It can be used for many of the same applications as a chef's knife and is considered a general-purpose knife.
Source: Culinary Institute of America



A **meat cleaver**, or a *butcher's cleaver*, has a very heavy blade that may have a slight curve. Because of its weight it can be used to chop through sinew and bones.
Source: Culinary Institute of America

Scimitar



The long, curved blade of a **scimitar** (SIM-ah-tahr) makes it ideal for cutting through large cuts of raw meat when making them into steaks, cutlets, or medallions.
Source: Culinary Institute of America



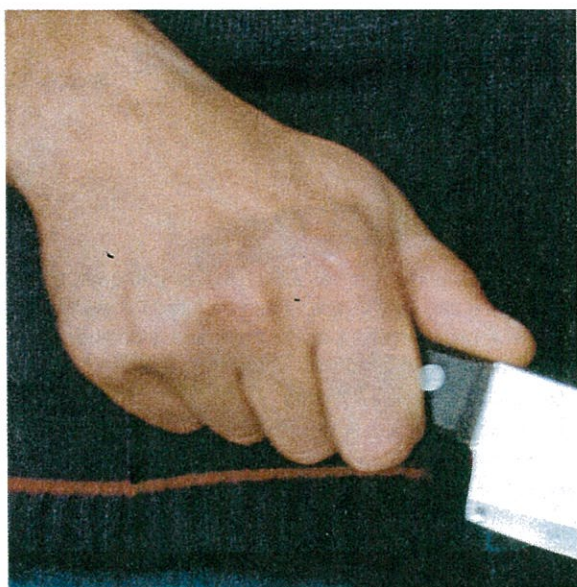
READING CHECKPOINT

What are the eight basic types of knives?

Using Knives Properly

Remember when you first learned how to write? First you had to concentrate on holding the pencil and shaping each letter. With practice, writing became automatic and you developed your own unique signature. That is just like learning to use a knife properly. First you have to concentrate on holding the knife properly and shaping each item. Before long, using your knife becomes automatic and you develop your own unique style.

Holding the Knife



Method 1:

Grip the handle with four fingers and hold the thumb firmly against the blade's spine. This method gives you more power.

Source: George Doyle/Stockbyte/Getty Images



Method 2:

Grip the handle with all four fingers and hold the thumb against the side of the blade. This method gives you more control.

Source: David Murray and Jules Selmes/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley

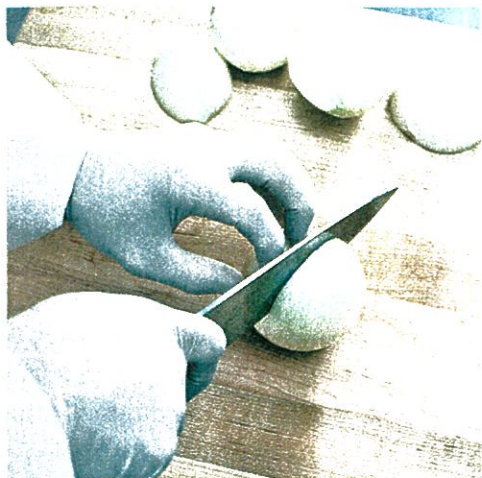


Method 3:

Grip the handle with three fingers, resting the index finger flat against the blade on one side and holding the thumb on the opposite side. This method gives you most control.

Source: Culinary Institute of America

The Guiding Hand



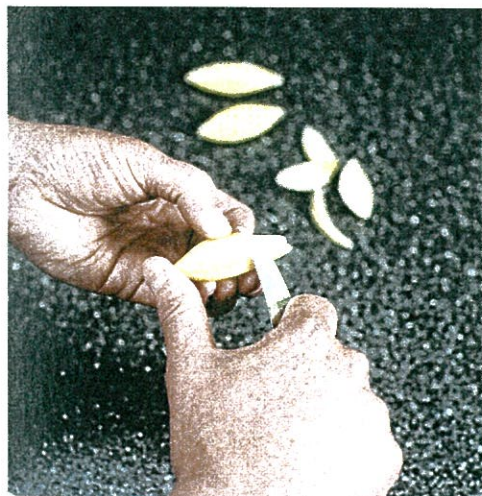
When cutting an object on the cutting board, tuck the fingers under the knuckles slightly and hold the object, with the thumb held back from the fingertips. The knife blade rests against the knuckles, making it impossible to cut the fingertips.

Source: Culinary Institute of America



When cutting into a food horizontally, as you would do to butterfly fish or meat, or to cut bagels or cakes into layers, the guiding hand can be placed on top of the food to keep it from slipping. Hold your hand flat on the upper surface of the food and exert a little pressure.

Source: Culinary Institute of America



Sometimes while peeling or trimming, you may find yourself holding the food in the air, above the cutting surface. The guiding hand will hold and turn the food against the blade. Make sure the food, your hands, and the knife handle are all dry.

Source: Culinary Institute of America

The guiding hand is also used to hold a carving or kitchen fork when disjointing or carving cooked meats and poultry. The tines of the fork can be either laid across the surface or inserted directly into the food to hold it in place.

Source: David Murray and Jules Selmes/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



Your choice of knife grip depends on the particular task, the specific knife, and your personal preferences. There are the three basic grips. While one hand holds the knife and makes the cuts, the other hand controls the food you are cutting.



READING CHECKPOINT

What are four ways the guiding hand is used in cutting with a knife?

FOCUS ON Safety

Knife Safety

1. Always hold a knife by its handle.
2. Never try to catch a falling knife.
3. When passing a knife to someone else, lay the knife down on a work surface and allow the other person to pick it up.
4. If you must carry an unsheathed knife in the kitchen, hold it straight down at your side with the sharp edge facing behind you.
5. Never borrow a knife without asking permission, and always return it promptly after using it.
6. Do not allow the blade of a knife to hang over the edge of a table or cutting board.
7. Do not use a knife as a tool to open bottles, loosen drawers, and so on.
8. Do not leave knives loose in areas where they cannot easily be seen or wouldn't be found normally (in a filled sink, under tables, on shelves).
9. Never store or use a knife above waist level.
10. Always cut away from your body.



Source: Culinary Institute of America

Making the Cut

The purpose of using a knife is to make a food smaller and to shape a food. Small, uniform pieces will cook evenly; large, irregularly shaped pieces won't. A uniform size also makes the finished product visually attractive.

Sometimes preliminary trimming, peeling, or squaring off is necessary to make the actual cuts easier. Foods with a uniform texture once they are peeled and trimmed (such as potatoes, carrots, celery, and turnips) can be cut by using the techniques described here. Foods that grow in layers (such as onions) or have pits, cores, or seeds (such as avocados or apples) all require special variations of these techniques. Meat, fish, and poultry that are still on the bone also call for special cutting and carving techniques. Special cutting techniques for these foods are covered in other chapters.

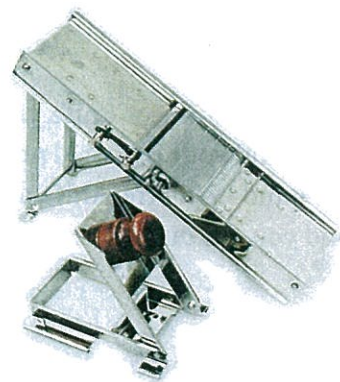
The following are the four basic types of cuts:

- Slicing
- Chopping and mincing
- Precision cuts
- Decorative cuts

Slicing Slicing cleanly through food should be no problem if a knife is properly sharpened. Simply guide the knife through the food, keeping the knife straight and even and letting the knife do the work. Adjust the length of your stroke and the pressure you exert on the food to suit the texture of the food you are slicing.

When you make clean, even slices, you can cut a wide range of foods from fruits and vegetables to meat and fish. Choose your knife carefully. Longer, thinner blades are best for very fine cuts or slices. Smaller blades are easier to manage with smaller foods.

Other food preparation equipment, such as meat slicers or specialty disks for food processors, can be used for slicing. These are especially helpful when a large number of uniform slices are required. A special slicing tool called a **mandoline** (MAHN-duh-lihn) is sometimes used for very precise slicing. It has extremely sharp blades that can be adjusted to achieve precise cuts and thicknesses.



Mandoline

Source: Culinary Institute of America

Chef's Tip

Safe Slicing

To slice safely, place the flat side of the food down so it won't slip. For rounded or irregular food, cut off a piece to create a flat surface.

Chopping and Mincing Chopping usually refers to cutting food into pieces that are roughly but not exactly the same size. Although *chopping* is sometimes used interchangeably with the word *mincing*, minced food is generally smaller than chopped food. To chop or mince, keep the tip of the knife in contact with the board and lower the knife firmly and rapidly, making repeated small cuts until you get the desired fineness.

Precision Cuts Precision cuts are used when nearly perfect uniformity is required. The ability to produce neat, even cuts shows your skill and craftsmanship. More importantly, it means food cooks evenly and retains the best possible flavor, nutrition, color, and appearance as it cooks. The following are some precision cuts:

- **Rondelles.** Pronounced rahn-DELLS, **rondelles** is a French term meaning “rounds.” The round shape is the result of cutting through any cylindrically shaped vegetable, such as a carrot or cucumber. To make rondelles, first trim and peel the vegetable. Then slice through the vegetable to make round pieces, or rondelles. Make sure each rondelle is the same thickness.
- **Variations of Rondelles.** Rather than cutting straight down to make a rondelle, you can cut down diagonally to make a **diagonal cut**. This exposes a greater surface area of the vegetable and is often used for Asian-style dishes. Some variations on the rondelle cut, such as *ripple* and **gaufrette** (go-FRET) cuts, require special blades on a mandoline, food processor, or slicer.



FIGURE 4-2

Slicing

The knife must be properly sharpened to slice correctly.

PREDICTING Based on your experience, what happens when you try to cut with a dull blade?

Source: Culinary Institute of America

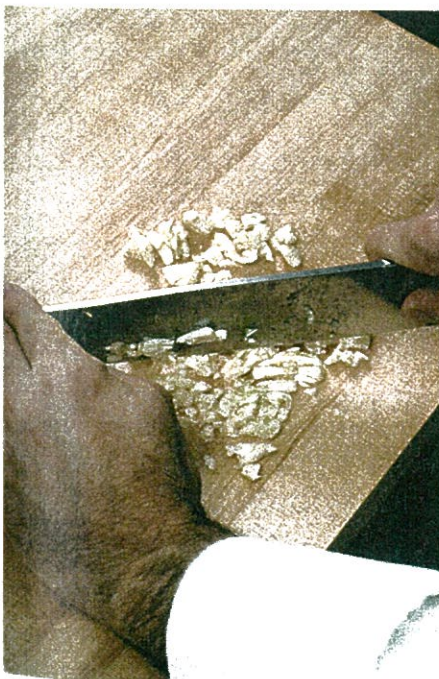


FIGURE 4-3

Chopping versus Mincing

Chopping (left) results in larger pieces than mincing (right).

PREDICTING If you added chopped onions to a recipe calling for minced onions, how might the final dish be changed in taste and texture?

Sources: (left) Culinary Institute of America; (right) David Murray and Jules Selmes/Dorling Kindersley

FIGURE 4-4

Rondelles

Slice through the vegetable to produce a rondelle.

APPLYING CONCEPTS *Why should each rondelle be the same thickness?*

Source: Culinary Institute of America



FIGURE 4-5

Using a Mandoline to Make a Gaufrette Cut

"Gaufrette" is French for "waffle."

PREDICTING *How do you think the taste and texture of a fried gaufrette potato would differ from that of a French fry?*

Source: Culinary Institute of America



- **Chiffonade.** Used primarily to cut leafy greens and other ingredients into very fine shreds, the **chiffonade** (shiff-en-ODD) cut is done by hand. Chiffonade is different from shredding. The cuts are much finer and more uniform.

BASIC CULINARY SKILLS

Making a Chiffonade Cut

- 1 Remove stems, if stems are tough.
- 2 Stack several leaves on top of each other.
- 3 Roll tightly.
- 4 Slice the rolled leaves, using narrow parallel cuts to produce fine shreds. Hold the rolled leaves tightly.



Source: Culinary Institute of America



Source: Culinary Institute of America

- **Julienne and Bâtonnet.** Both the **julienne** (ju-lee-EHN) and **bâtonnet** (bah-tow-NAY) cuts are long, rectangular cuts that both showcase a chef's cutting skills and allow the vegetables to cook evenly. French fries are a type of julienne cut. Fine julienne cuts are about $\frac{1}{16}$ inch thick, julienne cuts are about $\frac{1}{8}$ inch thick, and bâtonnet cuts are about $\frac{1}{4}$ inch thick.

BASIC CULINARY SKILLS

Making Julienne and Bâtonnet Cuts

- 1 Trim vegetables so their sides are straight. This makes it easier to make even cuts.
- 2 Slice vegetables lengthwise, using parallel cuts of the proper thickness ($\frac{1}{8}$ inch for julienne, $\frac{1}{4}$ inch for bâtonnet).
- 3 Stack the slices, aligning the edges.
- 4 Make parallel slices through the stack ($\frac{1}{8}$ inch apart for julienne, $\frac{1}{4}$ inch for bâtonnet).



Source: Culinary Institute of America

The Oldest Tool Known to Man

Stone cutting tools unearthed in Kenya are believed to be nearly 3 million years old. They are considered the oldest human-made tools. The first knives were made mainly from flint, a particularly hard stone. Once humans learned mining skills, soft metals such as copper, lead, and gold were extracted from ore. Unfortunately, these soft metals did not make strong knives.

By about 3500 B.C.E., copper was being melted with tin to form bronze. Iron was blended with the other metals to give items more strength and to resist rusting. Eventually, carbon was added and a metal known as carbon steel was developed. It resembled modern wrought iron.

At first, steel was used mainly for weapons. But by about 1500 C.E., steel knives, forks, and spoons

were used by wealthy people as cutlery. By the end of the 1800s, carbon steel of a consistent quality could be produced on a large scale. In the early 1900s, advancements in steel manufacturing made knives more durable and flexible—able to withstand the rigorous use of professional chefs today.

Research

Research the history of metals, paying particular attention to the development of carbon steel.



Stone Age knife with serrated edge

Source: Culinary Institute of America

- **Dice.** When you cut a **dice**, you produce a cube-shaped piece of food. First, the food is cut into either julienne or bâtonnet, as described earlier. The smallest dice is called a **brunoise** (brenn-WHAZ), which

BASIC CULINARY SKILLS

Dicing

- 1 **Trim and peel** the food, if necessary.
- 2 **Cut into slices.** Make slices the thickness you want the finished dice to be.
- 3 **Stack the slices** on top of each other.
- 4 **Make parallel cuts** of the same thickness as you used in step 2. This produces sticks.
- 5 **Place the sticks side by side.**
- 6 **Make parallel cuts** across the sticks, holding them in place by using your guiding hand.



Source: Culinary Institute of America

means “to brown” in French. A brunoise is also known as a *fine dice* and is about $\frac{1}{8}$ inch square. A fine brunoise is even smaller, only about $\frac{1}{16}$ inch square. A medium dice is about $\frac{1}{2}$ inch square, and a large dice, also called a **cube**, is at least $\frac{3}{4}$ inch square but can be larger. To make large dice or cubes, the bâtonnet cuts may range from $\frac{1}{2}$ inch thick to 1 inch thick or more.

- **Paysanne and Fermière.** These cuts are generally used in older, more traditional dishes, as can be seen in their names. **Paysanne** (pahy-SAHN) means “peasant” in French, and **fermière** (FURM-ee-air) means “farmer.” A paysanne cut starts with a bâtonnet that is $\frac{1}{2}$ inch thick. Cut the bâtonnet at $\frac{1}{8}$ -inch intervals so you have a flat $\frac{1}{2}$ -inch square that is only $\frac{1}{8}$ inch thick. A fermière has a bit more rustic look. To make this cut, start with a bâtonnet that shows the curved or uneven edges of the vegetable. Cut the bâtonnet into pieces that are $\frac{1}{8}$ to $\frac{1}{2}$ inch thick.
- **Lozenge.** The **lozenge** (LOZ-enj) **cut** is a diamond-shaped cut that is most often used in garnishes. To make this cut, start with slices that are about $\frac{1}{4}$ inch thick. Cut the slices into strips about $\frac{1}{2}$ inch wide. Holding your knife at an angle to the strip, make parallel cuts to produce a diamond shape.
- **Oblique Cut.** The **oblique** (o-BLEEK) **cut**, or *roll cut*, creates a piece in which the cut sides of a vegetable are neither parallel (side by side) nor perpendicular (at right angles). This effect is achieved by rolling the vegetable after each cut (which is why the cut is sometimes called a roll cut). This cut is used for long, cylindrical vegetables such as carrots. There are no specific dimensions for the oblique cut—the angle at which you choose to make the cuts is up to you, but the angle should be consistent with each piece.

BASIC CULINARY SKILLS

Making an Oblique Cut

- 1 **Make a diagonal cut** to remove the stem end of the peeled vegetable.
- 2 **Roll** the vegetable 90 degrees (a quarter turn).
- 3 **Slice** the vegetable, using the same diagonal cut as you used in step 1, forming a piece with two angled edges.
- 4 **Roll** the vegetable 90 degrees and repeat the diagonal cut. Continue until the entire vegetable has been cut.



Source: Culinary Institute of America

Sample Cuts

Brunoise (Fine Dice)

$\frac{1}{8} \times \frac{1}{8} \times \frac{1}{8}$ inch

Source: Culinary Institute of America



Small Dice

$\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$ inch

Source: Culinary Institute of America



Medium Dice

$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ inch

Source: Culinary Institute of America



Large Dice (Cube)

$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$ inch

Source: Culinary Institute of America



Fine Julienne

$\frac{1}{16} \times \frac{1}{16} \times 1$ to 2 inches

Source: Culinary Institute of America



Julienne

$\frac{1}{8} \times \frac{1}{8} \times 1$ to 2 inches

Source: Culinary Institute of America



Bâtonnet

$\frac{1}{4} \times \frac{1}{4} \times 2$ to $2\frac{1}{2}$ inches

Source: Culinary Institute of America



Rondelles

Thickness varies

Source: Culinary Institute of America



Diagonal Cut

Thickness varies

Source: Culinary Institute of America



Oblique Cut

Size varies

Source: Culinary Institute of America



Lozenge

$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{4}$ inch

Source: Culinary Institute of America



Paysanne

$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$ inch

Source: Culinary Institute of America



Fermière

$\frac{1}{8}$ to $\frac{1}{2}$ inch

Source: Culinary Institute of America



Decorative Cuts There are a few special cuts that a chef can use to produce a dish with a special look. These fine cuts are usually produced with a paring knife or a tournée knife.

- **Turned.** The turned cut is one of the most time-consuming cuts. It requires a series of precise cuts. The turned cut comes from the French verb *tourner*, meaning “to turn.” Vegetables are cut into 2-inch pieces and are turned and cut so the end result is a football-like shape. Classic turned vegetables have seven sides, but the number of sides depends on the vegetables used. Turned vegetables can also have a flat bottom and only three or four curved sides.
- **Fluted.** To make fluted mushrooms, the mushroom cap is turned against the blade of a paring knife. This removes small strips from the cap, creating a ridged design.
- **Fans.** If you make slices through relatively soft foods, such as pickles or strawberries, without cutting all the way through one end, you can spread the sliced end of the food into a fan.



READING CHECKPOINT

What are the four basic types of cuts?

Maintaining Knives

The mark of professional chefs is the attention they give to their tools. They keep knife edges in top condition by honing the knives frequently as they work, sharpening them when needed, taking them to a knifeshmith when an edge needs to be rebuilt, and storing them properly. No professional chef would ever drop a knife into a sink of dishwater or put a knife away dirty.

Sharpening Knives with a Stone You give a knife an edge by using a sharpening stone (also called a **whetstone**). Stones are used to sharpen the edge once it has grown dull through ordinary use.

Sharpening stones are available in a variety of sizes, textures, and materials—both natural and manufactured. The relative coarseness or fineness of the stone’s material is referred to as its **grit**. Large stones—some with several sides and a well for lubricating oil—can accommodate large or heavy blades. Smaller stones are more difficult to use on longer knives but are easier to transport.

Some chefs believe a knife blade should be run over a stone from the heel to the tip; others believe it should be run over the stone from the tip to the heel. Similarly, some

Chef’s Tip

Shredding Greens

When cutting tight heads of greens, such as lettuce or cabbage, cut the head into halves or quarters and remove the core before cutting shreds with a chef’s knife.

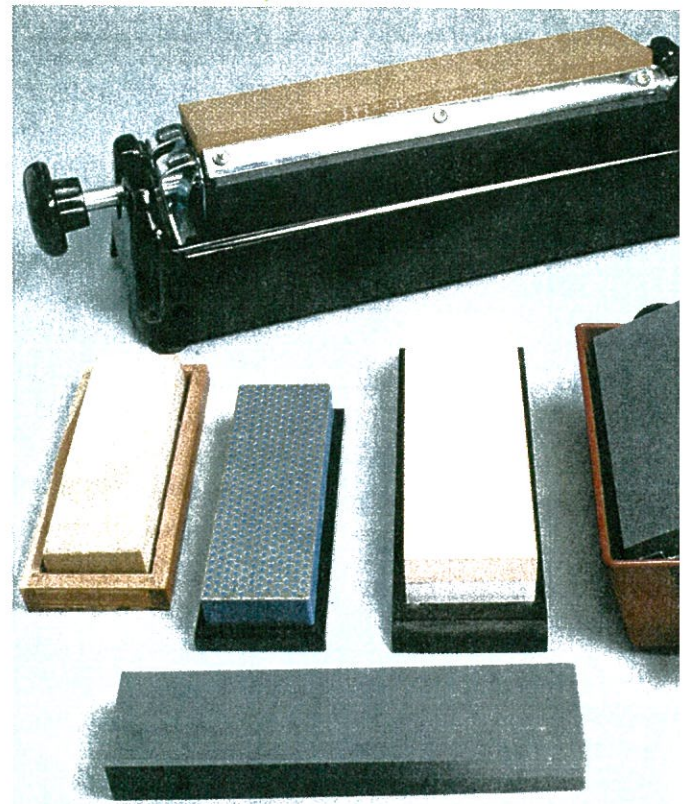
FIGURE 4-6

Sharpening Stones

A three-faced stone is mounted on a rotating frame. Other sharpening stones have different grits on each side.

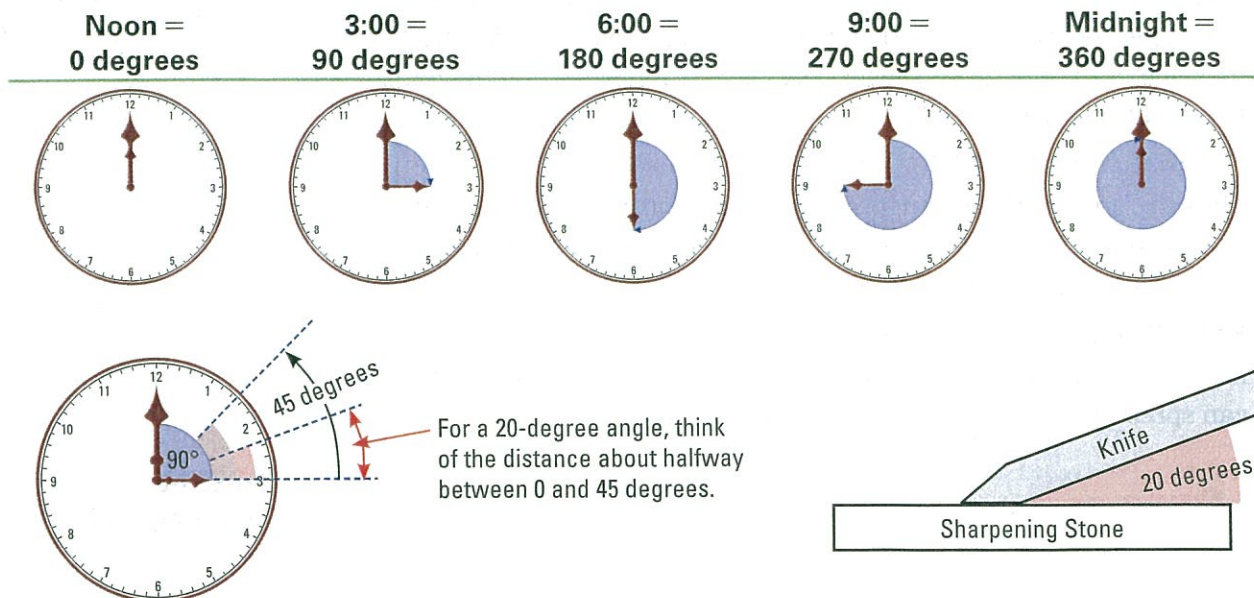
APPLYING CONCEPTS *When would a triple-faced stone be preferable to a two-faced stone?*

Source: Culinary Institute of America



Measuring Angles

Angles are measured in degrees. Here's an easy way to remember an angle: think of a clock.



Real-World Skills

Hold a knife blade at a 20-degree angle to a sharpening stone or a work surface.

chefs prefer to use a lubricant such as mineral oil on their stones, while others swear by water. Whichever way you prefer to run the blade over the stone, it is important to be consistent in the direction of the stroke. Water or mineral oil helps reduce friction as you sharpen your knife. Be consistent in the type of lubricant you use.

When using a sharpening stone, use a 20-degree angle for chef's knives and knives with similar blades. You may need to adjust the angle slightly to properly sharpen thinner blades, such as slicers, or thicker blades, such as cleavers.

Honing Knives with a Steel Between sharpenings, you maintain a knife's edge with a steel. A **steel** is a textured steel or ceramic rod used to keep the blade straight and to smooth out irregularities. A steel is also known as a *butcher's steel* or a *straightening steel*. Steels are not used to sharpen a knife's edge. They are used to straighten the edge, because with use, the knife's edge starts to roll over to one side. The process of straightening the knife's edge is called **honing** or **trueing**. Good chefs are in the habit of using a steel before they start any cutting task, as they work, and again before they store their knives.

FOCUS ON Safety

Don't Slip!

Make sure your sharpening stone doesn't slip. Place carborundum or diamond stones on a dampened cloth or rubber mat. A triple-faced stone is mounted on a rotating frame that can be locked into position.

Sharpening a Knife

- 1 **Position the stone** to keep it from slipping.
- 2 **Lubricate the stone** with mineral oil or water. The duller the blade, the coarser the grit of the stone you will need to start.
- 3 **Run the entire edge over the stone gently.** Use the coarsest grit you think you will need. Keep the pressure on the knife even and hold the knife at the correct angle (about 20 degrees). Use your guiding hand to maintain constant pressure.
- 4 **Make an equal number of strokes** on both sides of the blade. Use about 10 strokes.
- 5 **Switch stones.** Use an equal number of strokes on the stone with the next finer grit.
- 6 **Finish sharpening.** Use an equal number of strokes on the finest stone.
- 7 **Hone the knife** to remove any burrs.
- 8 **Clean and sanitize** the knife and clean the stone before use or storage.



Source: Culinary Institute of America

There are several honing techniques. The Basic Culinary Skill shown on page 122 is a method that is particularly suited to a beginning chef. Which-ever method you use, always work in the same direction on each side of the blade. Always use a light touch, stroking evenly and consistently. Lay the blade against the steel; don't slap it. You should hear a light ringing sound. A heavy grinding sound means you are using too much pressure.

Keeping Knives Cleaned and Sanitized To keep your knives safe and in good condition, you must clean and sanitize them. Knives can harbor pathogens, which means that they are a potential source of cross-contamination. Regular and thorough cleaning and sanitizing removes pathogens before they can affect foods.

Clean knives in hot soapy water and dry them thoroughly between cutting tasks as well as after use and before storage. Sanitize the knife by wiping down the handle and blade with a sanitizing solution so the knife does not become a site for cross-contamination.

Don't clean knives in a dishwasher. Wooden handles can warp or split. Edges can be damaged by jostling. The high water temperatures of some dishwashers could make the blade come out of temper and more likely to break or shatter. Never drop a knife into a sink when cleaning pots. The knife could be dented or nicked by a heavy pot.

Storing Knives Proper knife storage prevents damage to the blade and harm to unwary individuals. There are a number of safe, practical ways to store knives: in knife kits or cases and in wall- or tabletop-mounted racks.



Source: cretola/anna/Shutterstock

Steel

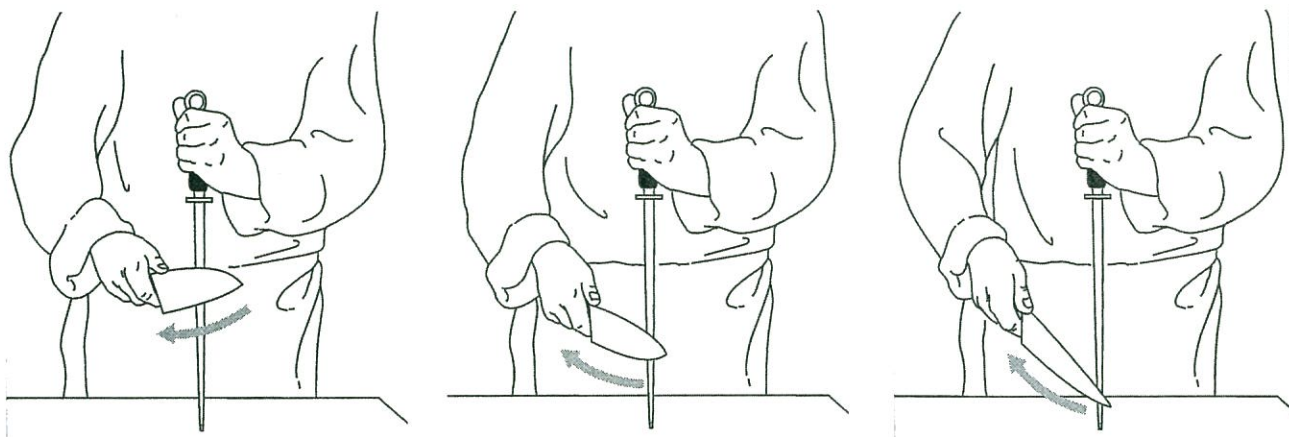
FOCUS ON Safety

Washing Knives

Never put a knife in a sink when cleaning dishes. Someone reaching into the sink could be injured by the knife's blade.

Honing a Knife

- 1 **Hold the steel in a vertical position** with the tip resting on a nonslippery surface.
- 2 **Position the heel of the knife** against one side of the steel, near the handle.
- 3 **Draw the knife down the shaft** of the steel and out from the steel so the entire knife blade, including the tip, is honed. Maintain light pressure and use an arm action, not a wrist action, to draw the knife smoothly down the steel.
- 4 **Repeat** a few times for the first side of the knife.
- 5 **Repeat steps 2, 3, and 4 with the other side of the knife.** Use the same number of strokes as you used on the first side.
- 6 **Clean and sanitize** the knife.



Draw the knife down the shaft while moving it out from the steel

- Knife guards or sheaths add an extra level of protection, especially when knives are stored loose in drawers.
- Choose a knife kit constructed of materials that are easy to clean and sanitize.
- Steel- and rubber-slotted holders are sanitary and can be washed and sanitized in the dishwasher.
- Mount slotted hangers on the wall, not on the side of a table where an exposed blade may be a safety hazard.
- Clean and sanitize sheaths, knife cases, and slotted knife holders often.

FOCUS ON Safety

Cutting Board Safety

To keep the board from slipping or rocking as you work, lay it on a clean, dampened towel or rubber mat. Working on a warped cutting board is dangerous because it cannot be kept stable.

Maintaining the Cutting Surface Cutting boards should always be used when cutting foods. Cutting boards should be flat, with a smooth surface. If they become chipped or gouged, they should be either resurfaced or replaced. Wipe the board frequently as you work to remove peels, trim, and other debris.

There are safety standards concerning cutting surfaces. Fine-grain woods such as maple or oak are acceptable for use as a cutting surface, as long as they are properly cleaned and sanitized, according to the USDA Food Code. Porous

or softer woods such as pine are not acceptable, however. Composition cutting surfaces are also acceptable, and may be preferred in some operations because they can be washed and sanitized in warewashing machines.

When you switch from one type of food to another (from chicken to lettuce, for example), you should clean, rinse, and sanitize the board. Today, many kitchens use color-coded boards to help prevent cross-contamination. (These were discussed in Section 1.2 of this text.)

If the cutting surface is a butcher-block top or other large surface, first wipe down the entire surface with a scrub brush or scrubbing pad and a container of clean, soapy water. Using a scraper, lift away any residue. Wipe down the board carefully with a clean, damp cloth to remove any traces of soap. Finally, wipe down the entire surface with a clean cloth that has been wrung out in a sanitizing solution. To prevent sanitizing solution from becoming dirty too quickly, wipe down the board with a damp, clean cloth before swabbing with sanitizing solution.



FIGURE 4-7
Knife Kit

A knife kit is a safe and practical way to store and transport your knives.

DRAWING CONCLUSIONS *Why might a chef be interested in transporting his or her knives?*

Source: Culinary Institute of America



READING CHECKPOINT

When is a sharpening stone used to maintain a knife?

4.1 ASSESSMENT

Reviewing Concepts

1. What are the main parts of a knife?
2. What are the eight basic types of knives and how are they used?
3. What are four ways the guiding hand is used in cutting with a knife?
4. What are the four basic types of cuts? Describe each.
5. When is a sharpening stone used to maintain a knife? When is a steel used?

Critical Thinking

6. **Drawing Conclusions** Why do you think chefs tend to use a chef's knife more than any other kind of knife?
7. **Comparing and Contrasting** What is the difference between a julienne cut and a bâtonnet cut?
8. **Inferring** Do you think a professional chef would tend to own a triple-faced sharpening stone?

Test Kitchen

Slice, chop, and dice a carrot, using a chef's knife. Now cut the same size pieces by using a paring knife. What are the differences?

LANGUAGE ARTS

Pronouncing French Terms

Many terms in the culinary world are French. Team up with a student who knows French, if possible. Practice your pronunciation of the French terms from this section: chiffonade, rondelles, julienne, bâtonnet, paysanne, tournée, gaufrette, fermière, and brunoise. When you are satisfied with your pronunciation, define each term.