

# 4.2



## Using Smallware

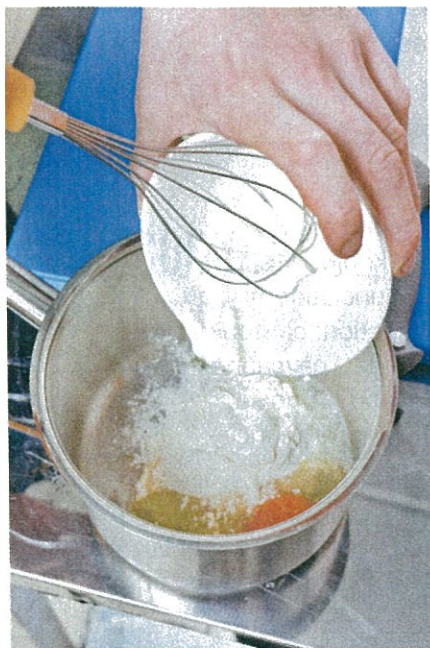
### READING PREVIEW

#### Key Concepts

- Selecting hand tools for specific tasks
- Selecting cookware for specific tasks
- Cleaning and sanitizing smallware

#### Vocabulary

- bain marie
- balance scale
- bimetallic-coil thermometer
- box grater
- braising pan
- casserole
- channel knife
- colander
- conical sieve
- conveyor belt dishwasher
- cookware
- corer
- crêpe pan
- custard cup
- double boiler
- drum sieve
- fish poacher
- food mill
- gauge
- gratin dish
- heat transfer
- kitchen shears
- liquid-filled thermometer
- melon baller
- microplane
- omelet pan
- palette knife
- Parisienne scoop
- pâté mold
- portion scale
- purée
- ramekin
- ricer
- roasting pan
- rubber spatula
- saucepan
- saucepot
- sauté pan
- sauteuse
- sautoir
- sheet pan
- single-rack dishwasher
- skimmer
- smallware
- soufflé dish
- spring scale
- steamer
- stockpot
- tare weight
- terrine mold
- thermistor thermometer
- thermocouple thermometer
- tongs
- turner
- undercounter dishwasher
- warewashing station
- whip
- whisk
- wok
- zest
- zester



Source: Maksim Shebeko/Fotolia

## Hand Tools

Hand tools, pots, and pans are often called **smallware**. The type of smallware used by a chef depends on the types of tasks the chef performs in the kitchen.

Culinary hand tools come in a huge variety. Although some hand tools are used in a home kitchen, others are more specialized and are not often seen outside a professional kitchen. Overall, hand tools can be broadly broken down into five general categories (specialized tools for baking and pastry are discussed in Section 17.1):

- Trimming and prep tools
- Shredding and grating tools
- Mixing and cooking tools
- Straining, draining, and processing tools
- Measuring tools

Selecting the smallware for any kitchen is an important task. The types of smallware needed in any kitchen will depend on the foods that are being



prepared. It is important to have enough hand tools and other smallware to make it possible to complete the preparation of foods, from trimming and prep to cooking the dish either on the stovetop or in the oven. The materials used to make these tools help determine their durability. A kitchen often requires smallware in various sizes, depending on the size of the recipe that is being prepared. Be sure that all smallware items are properly maintained and that they meet all the appropriate safety requirements. Electric items should be easy to use and clean.

**Trimming and Prep Tools** There are many specialized hand tools for cutting and slicing food. Often the food served by a food establishment influences the types of specialized hand tools the establishment uses. For example, an Italian restaurant may require an olive pitter. A restaurant that specializes in apple-based products may require a specialized apple peeler, an apple corer, and an apple cutter.

**Shredding and Grating Tools** Some foods can easily be shredded with a chef's knife. However, other more specialized tools, including slicers, mandolines, and mixers or food processors (with attachments) can also be used, particularly if a large amount of shredded food is required.

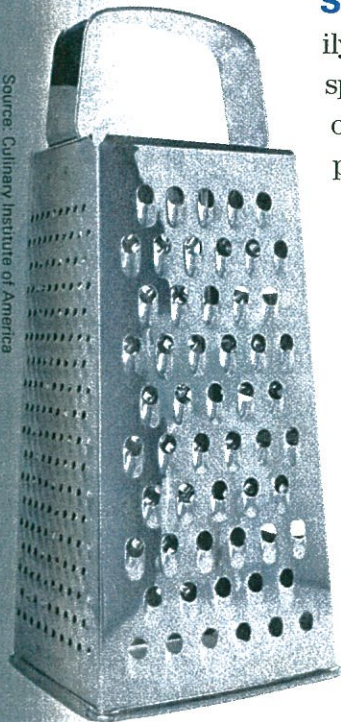
Grating is often done with the grater attachments on food processors and mixers. You could also use a **box grater**, a special hand tool for grating. A **microplane** is another general-purpose tool for grating food. Different types of graters and microplanes, whether specialized or general purpose, produce different types of results—from a coarse grate to a fine grate. Smaller openings in a grater are best for harder foods and make smaller, finer pieces. Larger openings are best for making large pieces and shreds. Specialized graters are available for specific tasks, such as grating nutmeg, cheese, or ginger. *Zesters* are handheld tools used to remove fine shreds of skin from lemons, oranges, and limes.

**Mixing and Cooking Tools** Chefs use mixers, blenders, and food processors to mix or blend food. They also use individual hand tools for mixing ingredients, including spoons and whips. When food is cooking, chefs use hand tools to stir the food to make sure that it is properly cooked. They also use hand tools such as ladles, skimmers, and turners for removing cooked food from the cookware in which it was cooked. Most of the mixing and cooking tools serve multiple purposes.

## FOCUS ON Safety

### Certified Tools

Professional tools must withstand heavy use. NSF International (formerly known as the National Sanitation Foundation) tests tools to ensure that they are well constructed, comfortable to hold, and safe. Look for the NSF certification on professional tools.



Box grater

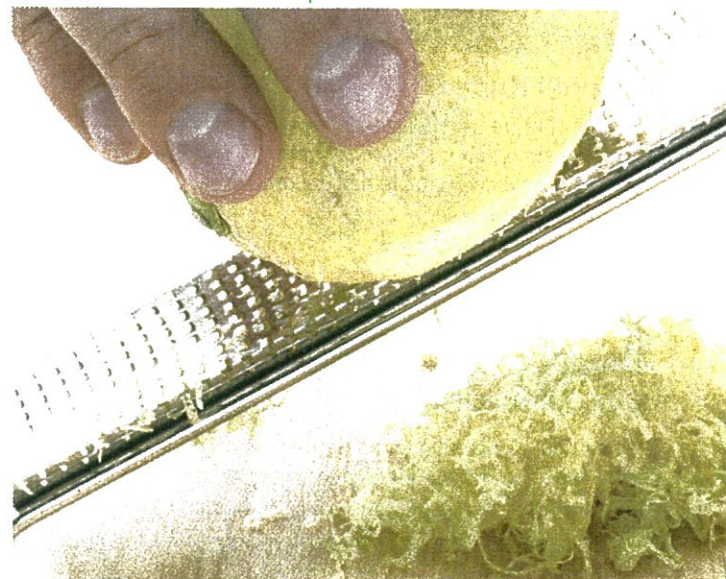
FIGURE 4-8

### Microplane

A microplane being used to grate a lemon for lemon zest.

**COMPARING/CONTRASTING** *When would you use a microplane with small openings and when would you choose one with larger openings?*

Source: FoodPhotography Eisin/AGE Fotostock America Inc.





# Hand Tools

## Trimming and Prep Tools



### Peeler

A peeler cuts a thin layer from vegetables and fruits more efficiently than a paring knife. Peelers

have a swiveling blade that moves easily over contours of food. If the blade is sharpened on both sides, it peels when moved in both an upward and a downward motion. Peelers are also used to make delicate garnishes, such as carrot or chocolate curls.

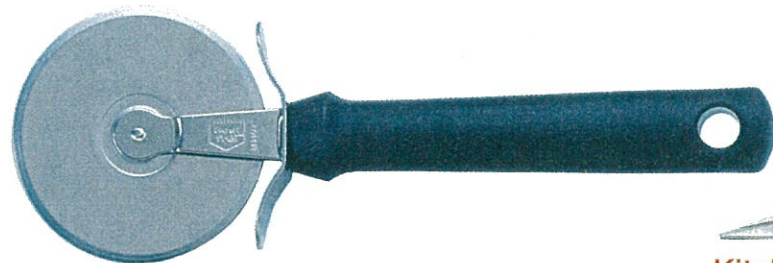
Source: Philip Wilkins/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Melon Baller

A **melon baller** scoops out smooth balls from melons, cheese, and butter. A melon baller with a scoop at each end, one larger than the other, is called a **Parisienne** (pah-REE-see-ehn) **scoop**.

Source: Culinary Institute of America



### Pizza Cutter/Pastry Wheel

This handy tool is used to cut pizzas and pastry. Some cutters have plain edges and some are fluted to make decorative edges.

Source: Clive Streater/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Channel Knife

A **channel knife** is used to cut grooves lengthwise in a vegetable such as a cucumber or carrot. A rondelle cut from the grooved vegetable has decorative edges that resemble a flower.

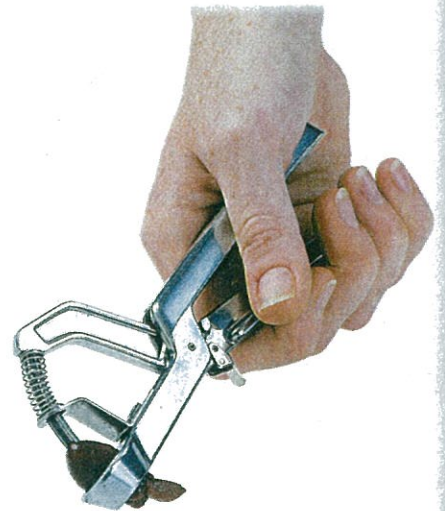
Source: Culinary Institute of America



### Zester

A **zester** cuts away thin strips of the zest of citrus fruit peels. The **zest** is the colored outer layer of the peel.

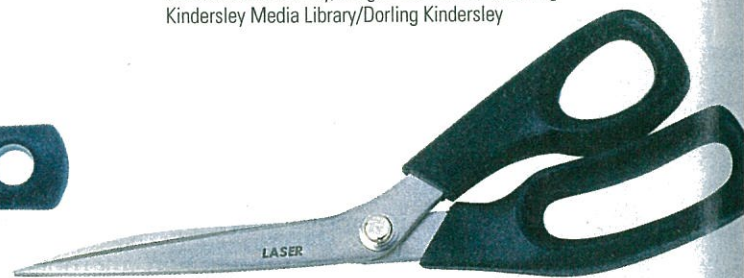
Source: Neil Fletcher and Matthew Ward/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Olive Pitter

Olive pitters remove the olive pit by plunging a small rod through the olive. An olive pitter can also be used for pitting cherries.

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



### Kitchen Shears

**Kitchen shears** are handy for many kitchen chores, such as cutting string and butcher's twine, trimming artichoke leaves, cutting grapes into clusters, and trimming herbs. Poultry shears, a heavy-duty type of kitchen shears, can cut through the tight joints and ligaments of poultry.

Source: Dave King/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Corer

A **corer** is used to remove the core of an apple or pear in one long, round piece. Corers are available in various sizes to use with small fruits like apples or larger fruits like pineapples. Some corers also cut the fruit into wedges or spears as they remove the core.

Source: ayedmoeed/Fotolia



### Fish Scaler

A fish scaler is used to remove the scales from a fish.

Source: Culinary Institute of America



# Mixing and Cooking Tools

## Mixing Bowls

Mixing bowls are usually made of a nonreactive material such as stainless steel. Glass, ceramic, or earthenware bowls may not be sturdy enough to use in a professional kitchen. (They can be used to serve prepared food.)

Source: Culinary Institute of America



## Whisk

A **whisk** is a hand tool with thin wires in a sphere or an oval shape. It is used to add air to mixtures. Very round whisks add a large amount of air and are sometimes called *balloon whisks*. A narrower whisk is often referred to as a **whip**. Whips often have thicker wires and are used to blend sauces or batters without adding too much air.

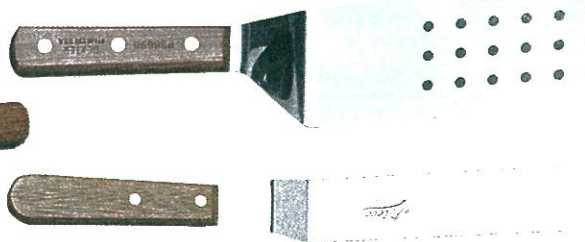
Source: Dave King/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



## Palette Knife

A **palette** (PAL-et) **knife** (also called a *straight spatula* or *flat spatula*) has a long, flexible blade with a rounded end. It is used for turning cooked or grilled foods and spreading fillings or glazes. (It is also used in baking.)

Source: Culinary Institute of America



## Turners

A **turner** (also called an *offset spatula* or a *flipper*) has a broad blade and a short handle that is bent to keep the user's hand off hot surfaces. The blade can be perforated or unperforated. It is used to turn or lift hot foods.

Source: Culinary Institute of America

## Rubber Spatula

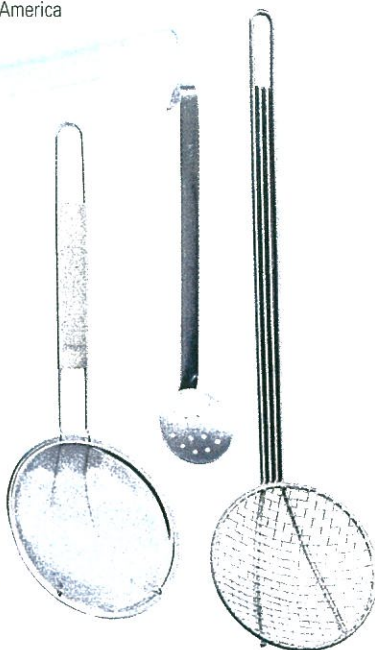
A **rubber spatula** (SPAT-chew-la) has a broad, flexible blade. It is sometimes called a *scraper* and is used to scrape food from the inside of bowls and pans. Some have a blade made of silicone that can withstand high temperatures.

Source: Dave King/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley

## Skimmers

A **skimmer** has a perforated surface and is used to skim impurities from liquids. It is also used to remove cooked food or pasta from a hot liquid. Skimmers are sometimes referred to as *spiders*.

Source: Culinary Institute of America



## Spoons

Spoons are used for mixing, stirring, scooping, and serving foods. They may be wooden or stainless steel and may be perforated, slotted, or solid.

Source: Culinary Institute of America



## Tongs

**Tongs** are useful for picking up hot items such as meats or large vegetables. They are also used for the sanitary serving of such items as cookies or ice cubes.

Source: Culinary Institute of America



## Kitchen Fork

A kitchen fork is used to move small pieces of meat from a grill or a broiler and to hold larger pieces of meat when cutting them.

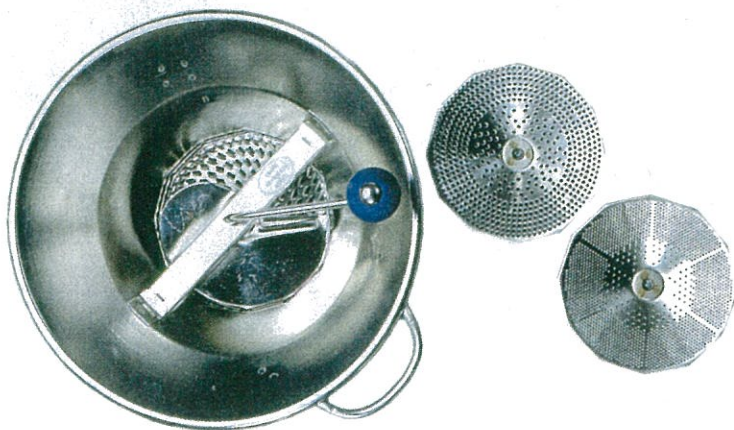
Source: David Murray/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley





# Hand Tools

## Straining, Draining, and Processing Tools



### Food Mill

A **food mill** strains and purées foods at the same time. (To **purée** (pyur-AY) is to process the food until it has a soft, smooth consistency.) A food mill has a flat, curving blade that is rotated over a disk by a hand-operated crank. Professional models have interchangeable disks with holes of varying sizes.

Source: Culinary Institute of America



### Drum Sieve

A **drum sieve** (SIV) is a tinned-steel, nylon, plastic, or stainless-steel screen stretched over an aluminum or wood frame. A drum sieve (also called a *tamis*) is used to sift dry ingredients or purée very soft foods.

Source: Culinary Institute of America



### Conical Sieve

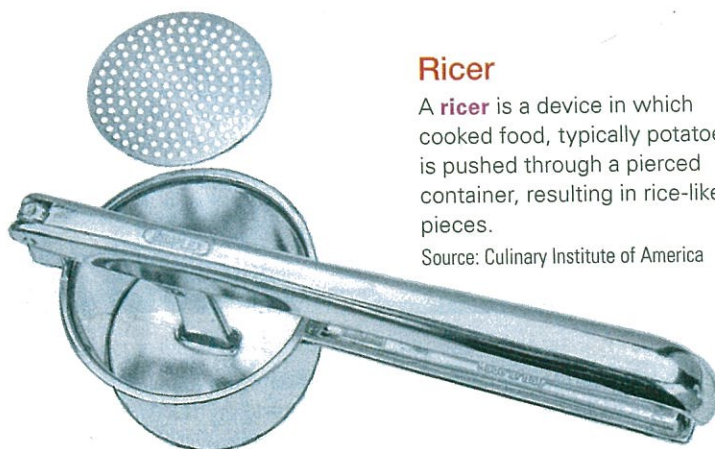
A **conical** (CON-i-cal) **sieve** (also called a *chinois*, *china cap*, or *bouillon strainer*) is also used to strain or purée foods. It is a very fine mesh sieve shaped like a cone.

Source: Culinary Institute of America

### Colander

A **colander** (COL-un-der) is a large, perforated stainless steel or aluminum bowl, with or without a base, that is used to strain or drain foods.

Source: Culinary Institute of America



### Ricer

A **ricer** is a device in which cooked food, typically potatoes, is pushed through a pierced container, resulting in rice-like pieces.

Source: Culinary Institute of America



### Funnel

A funnel is used to pour liquid from a larger to a smaller container. Funnels come in various sizes and materials.

Source: Clive Streeker/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



**Straining, Draining, and Processing Tools** There are many specialized hand tools for straining and draining foods. These tools are used with dry or liquid ingredients as well as with food that is in liquid. The delicate mesh of some strainers can be easily damaged. Never drop them into a sink, where they could be crushed or torn.

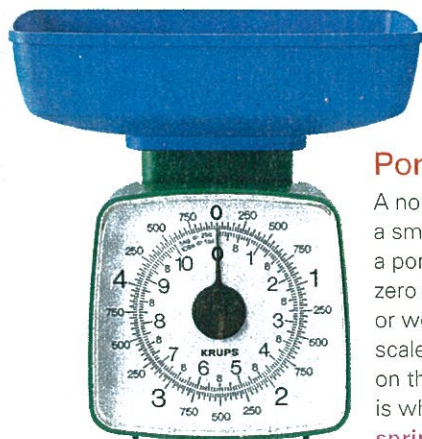
Chefs use mixers, blenders, and food processors to process foods, but they also use specialized hand tools for food processing, including sieves, food mills, and ricers. In some cases, the texture produced by these hand tools may be more desirable. Fine sieves are better at removing small fibers, while food mills and ricers may produce a more interesting, slightly coarser texture than food processors or blenders.

**Measuring Tools** Measuring is essential in every recipe, not only so a dish is prepared correctly, but also to help control the size and cost of a single portion. Measuring tools measure one of the following:

- Weight
- Volume
- Temperature

## Hand Tools

### Measuring Weight



#### Portion Scale

A nondigital **portion scale** measures the weight of a small amount of food or an ingredient (typically a portion). Portion scales can typically be reset to zero so you can allow for the weight of a container or weigh more than one ingredient at a time. These scales have a spring and the amount of pressure on the spring is what causes the dial to move. That is why a portion scale may also be known as a **spring scale**.

Source: Paul Bricknell/Dorling Kindersley Media Library/Dorling Kindersley



#### Digital Scale

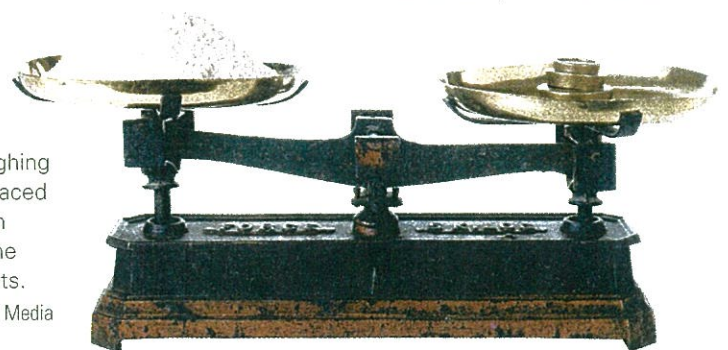
A digital scale (also called an *electronic scale*) provides a readout of the weight. Digital scales are usually considered more accurate than other types of scales. A small digital scale is often used as a portion scale.

Source: Culinary Institute of America

#### Balance Scale

A **balance scale** is typically used for weighing baking ingredients. The ingredients are placed on the left side and weights are placed on the right side. When the sides balance, the ingredients weigh the same as the weights.

Source: Clive Streeter/Getty Active/Dorling Kindersley Media Library/Dorling Kindersley





# Hand Tools

## Measuring Volume



### Measuring Cups and Spoons

Small stainless-steel measuring cups range from  $\frac{1}{4}$  cup to 1 cup. Stainless-steel measuring spoons range from  $\frac{1}{4}$  teaspoon to 1 tablespoon. Both the measuring cups and the spoons can be used to measure the volume of dry or liquid ingredients.

Source: Culinary Institute of America



### Volume and Liquid Measures

Volume measures are typically made from metal and marked to show fractions. Volume measures are made in 8-, 16-, 32-, 64-, and 128-ounce sizes and are often marked every 4 or 8 ounces. Liquid measures also measure volume but usually have a pouring lip to make pouring liquids easier. They are usually transparent glass or plastic and come in 1-cup, 1-pint, 1-quart, 2-quart, and 3-quart sizes.

Source: Culinary Institute of America



### Ladle

A ladle is used to portion liquids, such as sauces and soups. Ladles hold 1 to 16 ounces, depending on their size. Look for the measurement on the handle.

Source: Culinary Institute of America

## Measuring Temperature



### Thermistor Thermometer

A **thermistor** (therm-IS-tor) **thermometer** uses a resistor (a type of electronic semiconductor) to measure temperature. Thermistor thermometers give a fast reading (about 10 seconds) and can measure the temperature of thin and thick foods. They are not designed to stay in the food while cooking.

Source: Culinary Institute of America



### Bimetallic-Coil Thermometer

A **bimetallic-coil thermometer** uses a metal coil in the probe to measure temperature. Bimetallic-coil thermometers are available in an oven-safe version that can stay in food while cooking. They give slower readings (1 to 2 minutes) and should be used for food that is at least 2 to 2½ inches thick. An instant-read version is not oven-safe and gives a reading in 15 to 20 seconds.

Source: Culinary Institute of America



### Thermocouple Thermometer

A **thermocouple** (THER-mo-cup-ul) **thermometer** uses two fine wires within the probe to measure temperature. Thermocouple thermometers give the fastest readings (2 to 5 seconds) and can measure the temperature in thin and thick foods. They are not designed to stay in the food while cooking.

Source: Culinary Institute of America

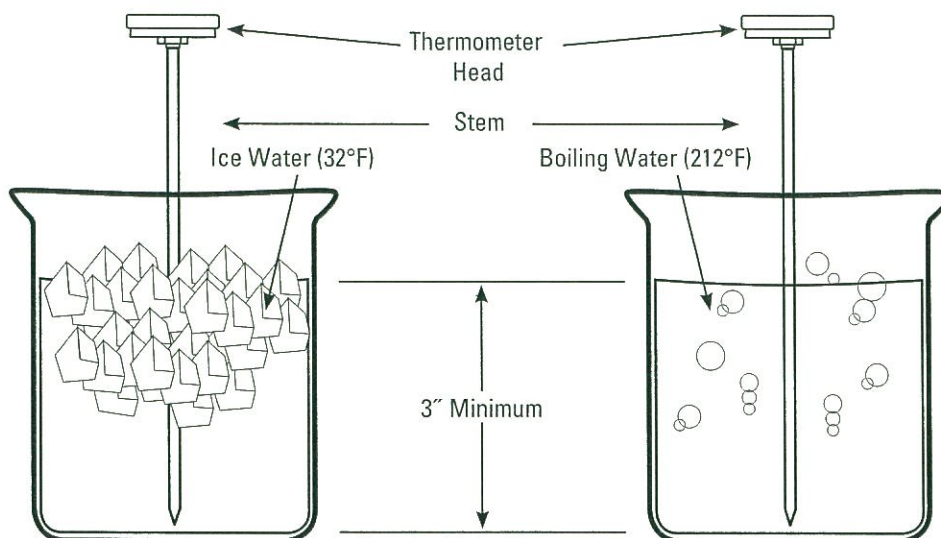
### Liquid-Filled Thermometer

**Liquid-filled thermometers** are the oldest type of thermometer. They have either a glass or metal stem filled with a colored liquid. They are designed to stay in the food while cooking. Because they can present a safety hazard, glass-stemmed thermometers are less commonly seen in professional kitchens.

Source: Culinary Institute of America



## Calibrating a Thermometer



Most professional bimetallic thermometers are calibrated by using a wrench and the adjusting nut under the dial. Calibration involves making sure the thermometer actually records the temperature accurately.

In the following Lab Activity, for true accuracy, distilled water should be used. The presence of substances other than water has the effect of raising the boiling point of water and lowering the freezing point. The boiling point is also affected by how far you are above sea level. The boiling point is the point at which vapor pressure (the steam rising from the surface of the water) equals the atmospheric pressure (the pressure from the atmosphere above the water). The higher you go, the less atmosphere there is to push down against the water. That means that at higher elevations, the boiling point of water will be less than 212°F above sea level.

Calibrate a thermometer before its first use, if it is dropped, or at regular intervals whenever its accuracy is in question. For specific calibration instructions on all thermometers, consult the manufacturer's instructions.

### Lab Activity

1. Check with the local cooperative extension service or health department for the exact temperature of boiling water for your area's atmospheric pressure.
2. Fill a glass with crushed ice. Add distilled water until you have at least 3 inches of water. Stir well. Insert the thermometer and wait until the temperature stops dropping and becomes steady (this depends on the type of thermometer you are testing). Without removing the thermometer, adjust it until the dial reads 32°F.
3. Fill a pot with at least 3 inches of distilled water. Heat to boiling. Using tongs and an oven mitt, hold the thermometer in the boiling water. Be careful not to scald your hand. If possible, adjust the thermometer while it is in the boiling water until the dial reads 212°F. It may be necessary to take the thermometer out of the water, adjust, and test again until the thermometer is calibrated.

If you use a container to hold the food as you weigh it, you must adjust for the weight of the container. This is known as the **tare weight**. To do this, place the empty container on the scale and then adjust the weight to zero. On digital scales, you will simply press the button for tare. For balance scales, you will place counterweights on the right side until the balance is set to zero. For portion scales, you reset the dial to zero.



## Chef's Tip

### Avoiding Warps

To keep pots, pans, and oven cookware from warping, never subject them to temperature extremes (leaving them over direct heat for long periods) or rapid temperature changes (plunging a hot pot into water).



#### READING CHECKPOINT

What are the five general categories of hand tools used in the kitchen?

## Cookware

Pots and pans are often referred to as **cookware**. Pans usually have flat bottoms, one long handle, and low sides that may be curved or straight. Pots are usually taller than pans and have straight sides. They usually have two handles.

Choosing the correct cookware for a dish is an important skill. For any cooking task, a chef must first consider the size of the cookware. Foods should fit the pan comfortably. The depth of the pan will determine whether it is appropriate. Tall pots and pans are best for dishes that require a lot of liquid, such as soups and deep-fried dishes, while shorter pans are best to get a crisp surface when a dish is cooked in a small amount of oil or for foods that need to be turned as they cook.

In addition to considering cookware's size, a chef must also keep in mind the rate of **heat transfer**, or how efficiently heat passes from the cookware to the food inside it. Some pans are made of materials that react to changes in temperature quickly, and others are capable of holding the heat for a more consistent cooking temperature. This is determined partially by the cookware's material and partially by its **gauge** (GAGE), or the thickness of the material. The thinner the gauge, the faster the cookware heats, but the faster it cools off. For quick cooking, choose a pan that transmits heat quickly and is sensitive to temperature changes. Moderate gauge works well. For slow cooking, choose a pan that holds heat well and transmits heat evenly. Heavy gauge is best.

Pans used in ovens are produced from the same basic materials used to make stovetop pots and pans. However, because the oven's heat is indirect, it is also possible to use glass and ceramic pans and molds without risk of cracking and shattering them.

For every cooking task, a chef must choose cookware that is an appropriate size, made from appropriate material, and in an appropriate gauge. Another consideration for chefs is that some cookware is made from materials that react with food. Commonly used materials for cookware include the following:

- **Copper.** Copper transfers heat rapidly and evenly. Because copper can react with high-acid food to create toxic substances, most copper pans are lined with a nonreactive metal. Copper discolors quickly. Proper upkeep requires a lot of time and labor.
- **Cast Iron.** Cast iron holds heat well and transmits it very evenly. Cast iron is brittle, however, and must be treated carefully to avoid pitting, scarring, and rusting. Cast iron is sometimes coated with enamel to increase its life and make cleaning easier.



Cast-iron skillet



# Cookware

## Stovetop Cooking



### Stockpot

A **stockpot** is a large pot that is taller than it is wide and has straight sides. Some stockpots have a spigot at the base so the liquid can be drained off without lifting the heavy pot.

Source: Culinary Institute of America



### Saucepot

A **saucepot** is similar in shape to a stockpot, although it is not as large. Saucepots have straight sides and two loop-style handles to ease lifting.

Source: Culinary Institute of America



### Saucepan

A **saucepan** has straight or slightly flared sides and a single long handle.

Source: Culinary Institute of America



### Sauté Pans

A **sauté pan** is a shallow, general-purpose pan that comes in two types. A **sauteuse** (SAW-toose) is a wide shallow pan with sloping sides and a single long handle. A **sautoir** (SAW-twahr) has straight sides and a long handle and is often referred to as a *skillet*.

Sources: (top) Culinary Institute of America; (bottom) Dorling Kindersley/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Wok

A **wok** has high, sloped sides, which make it great for quick stir-frying. Once one ingredient cooks, you can push it up the sides, leaving the hot center free for another ingredient.

Source: Dorling Kindersley/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Omelet Pan or Crêpe Pan

An **omelet pan** or **crêpe** (KRAY pan) is a shallow skillet with very short, sloping sides. A nonstick coating is often used in these pans.

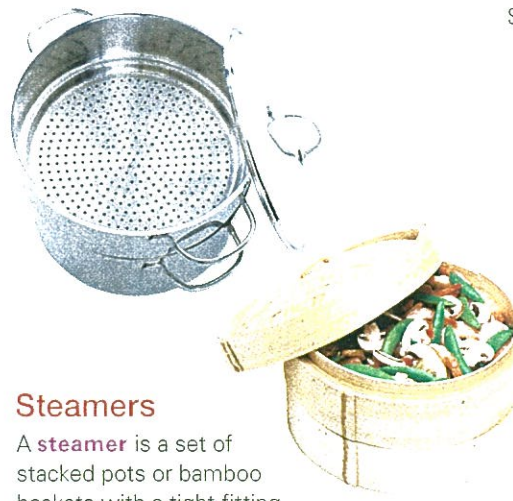
Source: Culinary Institute of America



### Double Boiler

A **double boiler** is actually a pair of nesting pots. The bottom pot is filled with water and heated, providing steady, even heat for the top pot. A double boiler is often referred to as a **bain marie** (BANE ma-REE).

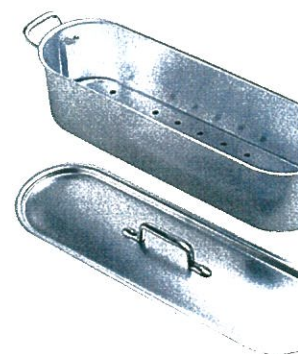
Source: Roger Phillips/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Steamers

A **steamer** is a set of stacked pots or bamboo baskets with a tight-fitting lid. The upper pots or baskets have perforated bottoms so steam can gently cook or warm the contents of the pots or baskets. In a metal steamer, water is placed in the bottom pot and it is placed on the range.

Sources: (top) David Murray and Jules Selmes/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley; (bottom) C Squared Studios/Photodisc/Getty Images



### Fish Poacher

A **fish poacher** is a long, narrow metal pan with a perforated lid used to raise or lower the fish doesn't break apart.

Source: Roger Phillips/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



# Cookware

## Oven Cooking\*

### Roasting Pan

A **roasting pan** is used for roasting and baking. Roasting pans have low sides and are made in various sizes. Roasting racks are placed inside the pan to hold foods as they cook so the bottom, sides, and top of the food all are cooked evenly.

Source: Dave King/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Sheet Pan

A **sheet pan** is an all-purpose baking pan. Sheet pans are shallow, rectangular pans with sides that are generally no higher than 1 inch. They may be full, half, or quarter size.

Source: Culinary Institute of America



### Terrine Mold

A **terrine** (teh-REEN) **mold** is traditionally made of pottery but can also be made of metal, enameled cast iron, or ceramic. Terrines are produced in a wide range of sizes and shapes; some have lids.

Source: Culinary Institute of America



### Soufflé Dish, Ramekin, and Custard Cup

A **soufflé** (soo-FLAY) **dish**, **ramekin** (RAM-i-kin), or **custard cup** is round and straight-edged. All three come in various sizes. Disposable versions made of aluminum are common.

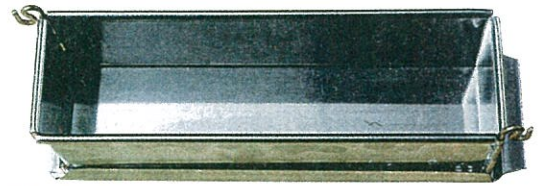
Source: Roger Phillips/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley



### Braising Pans and Casseroles

A **braising** (BRAYZ-ing) **pan** and a **casserole** (CASS-a-roll) typically have medium-high walls and lids to keep the moisture in. They may be made of various materials.

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



### Pâté Mold

A **pâté** (pa-TAY) **mold** is a deep, rectangular metal mold. Some pâté molds have hinged sides.

Source: Culinary Institute of America



### Gratin Dish

A **gratin** (GRAH-ten) **dish** is a shallow ceramic, enameled cast iron, or enameled steel baking dish.

Source: Tim Ridley/Image Partners 2005/Dorling Kindersley Media Library/Dorling Kindersley

\*Baking pans used in making bread, pastries, and desserts are discussed in Chapter 17.



- **Stainless Steel.** Although a poor and uneven heat conductor, stainless steel is often used for cookware because it is easy to clean. Sometimes copper or aluminum is sandwiched in the bottom of the pan or pot to improve heat conductivity. Stainless steel will not react with foods.
- **Steel.** Other types of steel (blue steel, black steel, pressed steel, and rolled steel) transmit heat rapidly and are preferred when food must be heated quickly. These pans are generally thin and are prone to discoloration.
- **Aluminum.** An excellent heat conductor, aluminum is a soft metal that wears down quickly. It also reacts with foods. When a metal spoon or whip is used to stir a white or light-colored sauce, soup, or stock in an aluminum pot, the food may turn gray. Treated aluminum (often referred to as *anodized aluminum*) tends not to react with foods and is popular.
- **Nonstick Coatings.** A final consideration for chefs is the use of nonstick coatings in cookware. Nonstick coatings can be useful in cookware but require the use of wooden, plastic, or silicone utensils to protect the surface and extend the pan's life.



**READING CHECKPOINT**

What are some types of cookware used for stovetop cooking? For oven cooking?

## Cleaning and Sanitizing Smallware

Some foodservice establishments clean smallware by hand. Other establishments use a dishwasher to clean smallware.

**Washing by Hand** Even though smallware can be cleaned by hand, it is still important to thoroughly clean and sanitize it to prevent cross-contamination. A three-compartment sink is required for thorough cleaning and sanitizing. Some sinks may have four compartments instead of three. In that case, the first sink is used to scrape and pre-rinse dishes and smallware. This sink often has a garbage disposal unit. Some sinks with counter space provide holding areas for dirty and clean dishes. Dish carts often double as holding areas.

First, scrape food waste into a lined garbage can. Then rinse dishes and smallware in a sink. Some sinks have disposals mounted in sink drains, which may run in batches or continuous mode. They grind up food from rinsed dishes and smallware. Manufacturers recommend against grinding solid bones, fruit pits, and other large, hard objects. Be careful to keep silverware out of disposals.

When using a three-compartment sink, follow these general steps to clean and sanitize most smallware:

1. Clean and sanitize the sink area.
2. Scrape and pre-rinse smallware.



Source: Antonio Gravante/Fotolia

Pan with nonstick coating

## FOCUS ON Safety

### Clearing Disposal Jam:

If a disposal unit gets jammed, turn it off immediately and consult the manual. You may be able to clear a small object by turning a screw or knob. Never put your hand into a disposal.





FIGURE 4-9

### Three-Compartment Sink

A three-compartment sink is used for scrubbing pots and pans.

**APPLYING CONCEPTS** *Why is it important to replace the sanitizing solution according to the manufacturer's instructions?*

Source: Vincent P. Walter/Pearson Education/PH College

3. Fill the first sink with 110°F water and detergent. Wash the smallware thoroughly with a brush. Drain and refill the water as needed.
4. Fill the second sink with water that is also about 110°F. Rinse the smallware to remove all traces of detergent.
5. Fill the third sink with water at the temperature specified by the manufacturer of your sanitizing agent. Add the recommended amount of sanitizing agent (chlorine or iodine). Submerge the smallware in the third sink for about 30 seconds.
6. Remove and air-dry smallware in a clean area. (Do not towel-dry. This can recontaminate smallware.)

**Dishwashers** A foodservice business needs to clean a flow of dirty tools, pots and pans, and dishes every day. The business usually establishes a **warewashing station** (also called a *scullery*) that provides rinsing, washing, and holding areas. The station also includes trash cans, sinks, garbage disposals, and professional dishwashing equipment. The dishwashing staff scrape and rinse plates and load the dishwasher. The equipment uses water



at a high temperature to sanitize smallware and dishes. Clean dishes are then held on carts or shelves, ready for the wait staff.

Typically, three types of dishwashing equipment may be used in a professional kitchen:

- **Undercounter Dishwashers.** An **undercounter dishwasher** holds portable dish racks that allow for the easy transfer of clean and dirty dishes. Specialized glass washers are available.
- **Single-Rack Dishwashers.** A **single-rack dishwasher** processes small loads of dishes quickly. Scraped and rinsed dishes are placed in the upper compartment. The washer begins when the door is closed. Clean dishes are ready in minutes.
- **Conveyor Belt Dishwashers.** A **conveyor belt dishwasher** can process a high volume of dishes in a continuous flow.

Some dishwashers have the option of various cycles, depending on what you are washing. These cycles determine the water temperature as well as the length of the cycle. Choose the right cycle for your needs, if that is an



FIGURE 4-10

### Conveyor Belt Dishwasher

These dishes are emerging from a conveyor belt dishwasher.

**APPLYING CONCEPTS** *Why is it important for the dishwasher to use water at high temperatures in the process of washing smallware and dishes?*

Source: Vincent P. Walter/Pearson Education/PH College



## Chef's Tip

### Special Cleaning and Sanitizing

Smallware such as wooden utensils, cast-iron pans, aluminum pans, and rolled-steel pans require special cleaning and sanitizing procedures. They should not be washed in warewashing machines. Consult the manufacturer's directions for proper care and cleaning procedures for these materials.

option. Be sure that items going into the dishwasher are scraped. It is a good idea to rinse them with water. Some dishwashing setups include an area to load a rack that is over a sink along with a hand sprayer.

Load dishwashers properly. If items are stacked too tightly or piled up on top of each other, the water will not be able to reach all the surfaces. Make sure that any small items or sharp items are securely loaded so they will not fall out of the rack and into the washing unit. Load light plastic items so they cannot drop down onto the heating element. They will melt in contact with the unit.

Even though dishwashers are usually hot enough to clean and sanitize dishes, it is important to clean and sanitize the dishwasher itself. Keep all surfaces clean of debris. Wipe down the inside and outside surfaces of the dishwasher with a sanitizing solution. If hard water starts to build up, use a product that removes this scale and follow the manufacturer's instructions.



#### READING CHECKPOINT

What is the general method for cleaning and sanitizing smallware?

## 4.2 ASSESSMENT

### Reviewing Concepts

1. Identify the five general categories of hand tools.
2. List at least six types of cookware used for stovetop cooking.
3. What is a warewashing station?

### Critical Thinking

4. **Applying Concepts** Explain the concept of heat transfer and gauge as it applies to cookware.
5. **Comparing/Contrasting** List the pros and cons of aluminum, stainless-steel, copper, and cast-iron cookware.
6. **Inferring** Why is a ladle regarded as a measuring tool?

### Test Kitchen

Slice 2 ounces of Cheddar, using a chef's knife.  
Shred the same amount of cheese, using a

mandoline. Grate the same amount of cheese, using a box grater (or the disks on a food processor). Compare the results and the amount of effort required to produce those results.

## SCIENCE

### Heat Transfer

Gather three 12-inch skillets: a cast-iron skillet, an aluminum skillet, and a stainless-steel skillet. Turn the stove burner to high. Place 1 tablespoon of water in each skillet. Use a stopwatch to record the amount of time it takes for the water to begin to sizzle after you place each skillet on the burner. Place only one skillet on the burner at a time and make sure to use an oven mitt when handling hot skillets. Analyze your data to rank the skillets' ability to transfer heat.

## PROJECT

### 4

**Knife Skills** You are now ready to work on Project 4, "Knife Skills," which is available in "My Culinary Lab" or in your *Student's Lab Resources and Study Guide* manual.