Smallwares and Hand Tools

Unit: Culinary Arts

Problem Area: Culinary Vocabulary

Lesson: Smallwares and Hand Tools

Student Learning Objectives.

Instruction in this lesson should result in students achieving the following objectives:

1. **Identify basic smallwares and hand tools.**
2. **Recognize quality characteristics of smallwares and hand tools.**
3. **Demonstrate proper care of smallwares and hand tools.**

Resources.

The following resources may be useful in teaching this lesson:

Cookeryonline.com. Accessed Aug. 30, 2010. <http://www.cookeryonline.com>.

"German Apple Cake," *All Recipes.com*. Accessed Aug. 30, 2010. <http://allrecipes.com/recipe/german-apple-cake-i/detail.aspx>.

McGreal, Michael J. *Culinary Arts: Principles and Applications*. American Technical, 2008.

Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- bake ware
- cookware
- dry measures
- hand tools
- hygrometer
- liquid measures
- National Sanitation Foundation (NSF)
- portioning
- smallwares
- tare thumbscrew/button
- thermometers
- volume
- weight

Interest Approach.

Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *Tell your students that kitchen hand tools and smallwares make cooking and preparation tasks easier and more efficient. These implements also make the end product more visually appealing. Think about trying to take the peel from an apple or a potato with a dinner knife.*

> *Ask for three student volunteers to demonstrate different ways to remove an apple peel. Explain that the task is to remove the least amount of flesh with the peel. One student would use the dinner knife; the next student would use a vegetable peeler; and the third student would use a paring knife.*

> *Assess each student's work. As a class, decide which tool produced the least of amount of apple flesh lost during peeling. Next, decide which pared apple is the most visually appealing. Is it the same apple? Finally, ask which tool is the best for slicing the peeled apples into wedges or rounds. Is it the same tool chosen as the most efficient at peel removal?*

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Identify basic smallwares and hand tools.

Anticipated Problem: What are the basic smallwares and hand tools used in a commercial kitchen?

I. Smallwares and hand tools

A. ***Smallwares*** are glassware, flatware, dinnerware, pots and pans, table top items, bar supplies, food preparation utensils and tools, storage supplies, service items, and small appliances costing $500 or less. Explain to your students that in this lesson, the focus is on items used to hold food during preparation, cooking, holding, and storage. This lesson is not designed to address all smallwares and hand tools.

B. ***Cookware*** is a collection of pots and pans used for stovetop cooking that range in size from large industrial to small individual.

1. Pots usually have straight sides and handles at the top edge for carrying. Examples are stockpots, saucepots, steamers, rondeaus (braziers), and poachers.
   a. Stockpots are large, round, and deep pots with loop handles. Stockpots are used for simmering and boiling tasks. Most have snug-fitting covers, and some have racks to hold foods off the bottom of the pot.
   b. Sauce pots are large, round, medium-deep pots with loop handles. Sauce pots are preferable to stockpots when the products need to be stirred or whipped during cooking because the height of stockpots impedes these tasks.
   c. Steamers are pots with a basket insert that holds food items above boiling water to steam-cook food.
   d. Rondeau or brazier pots are wide, shallow, heavy-bottomed pots, with straight sides and loop handles. They look similar in shape to short stockpots and have a close-fitting lid. Rondeaus are similar to Dutch ovens and are used to sear, braise, poach, pan-roast, fry, and stew foods—mainly meats.
   e. Poachers are used mainly for fish and are long, deep, and narrow pans that accommodate the shape of a fish.
   f. Double-boilers have a lower section (similar to stockpots) in which water is simmered or boiled and an upper section holds food that must be cooked at temperatures below the boiling point. The upper pan rests on shoulders that suspend it above the boiling water. Covers are available for the upper pan. Double-boiler pots are often used in place of bain-maries.

2. Pans come in a variety of sizes and are used for multi-purpose stovetop cooking. Some have straight and some have sloping sides. Examples are:
    a. Saucepans are smaller than braziers (rondeaus) and shallower and lighter than sauce pots. They have a long handle for lifting and generally have a cover.
    b. Skillets and fry pans are heavy, flat-bottomed, shallow, and slightly sloping-walled pans that are a bit curved or flared. They hold heat well and have a long handle. Some large fry pans have a grab handle opposite the main handle. Skillets and fry pans are used for pan-broiling or frying.
    c. Sauté pans (sauteuse) are small, round, and shallow pans with sloping sides for quick frying in a small amount of fat. They are similar to skillets, but they are designed for smaller amounts of food (5 to 11 inches in diameter).
    d. Crêpe pans are heavy; they hold and disperse heat evenly. The pans have a smooth surface and shallow, sloping sides. Pans designed for kitchen use are usually made of iron. Those designed for table service (reheating of the crêpes) are often copper or aluminum.
    e. Grill pans are frying pans that come in a variety of shapes with deep, parallel ridges on the surface that produce an attractive pattern on the meat, fish, or produce. Grill pans cook by radiant heat (similar to outdoor grills) on stovetops. Cast iron grill pans hold heat well but are heavier than other materials. Some grill pans are designed with a moat to catch excess fat and drippings.
    f. Woks (pronounced “wahks”) have a rounded, concave bottom, a long handle, and often a grab handle. Woks are desired for their excellent heat control and are made from rolled steel, aluminum, and stainless steel. They are used for stir-frying, deep-frying, steaming, braising, and stewing. Pans for gas stoves often have a ring-shaped stand for use on the burner. The basic hand tool for wok cookery is a long-handled chahn (spatula) or hoak (ladle).

C. ***Bake ware*** is equipment used in ovens or on steam tables to cook, warm, or steam foods. In general, bake ware is rectangular in shape with straight sides and with or without loop handles. Bake ware pans include sheet pans, cake pans, roasting pans, specialty pans, and hotel pans.
    1. Sheet pans and bun pans are rectangular with shallow sides and come in a variety of sizes. Bun pan silicone liners eliminate greasing and sticking, which makes cookie, bar, and cake removal easier.
        a. Full-sheet or bun pans are 18 × 26 × 1 inch.
        b. Half-sheet pans are 13 × 18 × 1 inch.
        c. Quarter-sheet pans are 9 × 13 × 1 inch.
        d. Pizza pans
    2. Cake pans
        a. Layer pans come in common sizes (e.g., 8 × 2 and 9 × 2 inches). They may also be as small as 6 inches or as large as 16 inches in diameter and

3 to 4 inches in height. Layer pans are round or square and are used to bake butter and sponge cakes as well as cinnamon rolls and upside-down cakes.

b. Jellyroll pans are 15 × 10 × 1 inch (or other sizes) and are used for sponge cakes, bars, and some sheet cakes.

3. Pie and tart pans
   a. Pie pans (plates) are shallow, smooth-bottomed pans with flared sides used with one- and two-crust pies.
      (1) Flared or sloped sides are typical of American pies served from the pan.
      (2) European bakers tend to use straight-sided tart pans or flan forms or rings.
      (3) Pans come in common sizes of 9- and 10-inches in diameter in a variety of mediums: aluminum, ceramic, glass, and stainless steel.
      (4) Completely pre-baked shells are best baked in aluminum or anodized aluminum. Pie shells that are partially baked and then filled to finish baking the filling and crust are best in ceramic pans because the ceramic pans hold the heat longer than metal pans.
   b. Tart pans are similar to pie pans and come in a variety of shapes and sizes (from individual sizes to 22 × 4.5 inches to round shapes), including:
      (1) Flan rings and forms (e.g., open ring, square, or rectangle baked on a sheet pan)
      (2) Fluted flan rings with removable bottoms
      (3) Tinned loose-bottomed tart pans
      (4) Ceramic quiche molds
      (5) Tinned barquette pans (look like small boats)
      (6) Tinned individual pie-shaped forms
4. Specialty pans create specific shapes from baked goods.
   a. Angel food or tube pans (including bundt) are typically 10 inches in diameter and hold approximately 12 cups of batter. Tube pans are used for angel and chiffon cakes as well as certain butter cakes.
   b. Springform pans come in several sizes. The most common sizes are 9- and 10-inch diameter pans with removable sides. Springform pans are especially useful when preparing cheesecakes or desserts in which the baker desires the customer to “see” the cake’s sides.
   c. Muffin frames are in a 12- or 24-cup size and are made of tin or aluminum. Standard-size round cups hold approximately 3.5 fluid ounces each. Muffin frames are used to bake muffins, cupcakes, babas, and cinnamon rolls.
   d. Loaf pans are usually 8, 9, or 10 inches long × 4 inches wide × 4 inches tall, with slightly flared sides. They are often tinned with rolled or folded edges and are available in glass, ceramic, aluminum, steel, and Pullman varieties. Yeast and quick breads, meatloaf, and pound cakes are baked in

individually sized pans, in 9- or 10-inch loaf-shaped pans, or in bread straps (four or six pans are strapped together).

e. Other specialty pans are individual bundt, ladyfinger pans, madeleine tins, brioche molds, baba molds, tinned cornucopia molds, and savarin molds.

5. Roast and hotel pans

a. Roast pans have deep sides, are 4 to 5 inches tall, and have loop handles. Roast pans are intended to hold large pieces of meat. Covers are sometimes used on these pans.

b. Hotel pans (counter or service pans) are stainless steel with wide rims that fit standard steam table and salad bar openings. These pans are versatile. They may be used to cook or steam food and then be set directly on a serving line or used as a transfer pan from the steamer or cold food station to the steam table or salad bar. These rectangular pans come in full, half, third, fourth, and eighth sizes to insert in steam tables or salad bars. Perforated forms are available. Their depth is variable (from salad toppings to soup depth). Depth adaptors are also available.

D. ***Hand tools*** are items that are held and used to prepare and serve food. Hand tools are made from a variety of materials; many manufacturers use colors and materials to make the items trendy. These tools are organized into the following categories: measuring, separation, turning and transfer, mixing, scraping, cutting, and specialty. Examples are:

1. Measuring devices are tools and utensils required for the accurate measurement of time, ingredient weight and/or volume, portion control, temperature, and humidity. The following are common measuring tools:

a. Timers are used extensively in the commercial kitchen and are available in manual and digital types. Many pieces of equipment have a timer system embedded in the product, and most have a unique sound to differentiate which timer expired.

b. Scales are used to measure ingredients and foods by ***weight*** (the heaviness) and may be accomplished using the customary system (ounces and pounds) or using the metric system (grams and kilograms). Ingredients or portions are more accurately measured by weight than by volume. Portion and digital scales have a tare feature that makes an allowance for a container that will hold the ingredient or food to be measured. When a cup or bowl is placed on the scale, the ***tare thumbscrew/button*** is a device function that deducts the gross weight of the container from the weight of the ingredient. Various types of scales are used in the commercial kitchen, including:

(1) Baker's scale—A beam scale with twin platforms

(2) Portion scale—A food platform and a dial indicator

(3) Digital scale—An electric scale with a food platform and a digital readout (useful for measuring small amounts of spices, herbs, and/or sandwich filling)

(4) Platform—Larger scales used in the receiving area

c. Measuring cups—***Volume*** is the amount of space taken by a material. It is measured by liters in the metric system and by cups, pints, quarts, and gallons in the customary system. In commercial food services, measuring cups are used when measuring liquid or when accurate measurement is not a necessity.

(1) ***Dry measures*** are round, handled, and calibrated in parts of a cup: ¼-, ⅓-, ½-, and 1-cup sizes. They are used to measure dry or sticky ingredients. Dry measures are accurate when the measuring device is full and the ingredient is leveled.

(2) ***Liquid measures*** are round, lipped, and side-handled in addition to being graduated in quarters (ounces and cups) and primarily used to measure pourable ingredients. These measures are usually made of glass, plastic, or stainless steel and have capacities from 1 cup to 1 gallon.

(3) Measuring spoons are used to measure small ingredient amounts of dry and liquid forms. Typically, sets include ¼, ⅓, and ½ teaspoon and 1 tablespoon customary sizes; they are also available in metric sizes. There is a myth that all tablespoon measurements are equal. Quoted in *Gourmet Magazine*, John Willoughby said, "There is a wide variation in the volume of commercial tablespoons." Willoughby tested eight varieties of measuring spoon sets and found the average discrepancy between tablespoon measurements of table salt was 5 to 10 percent. If preparing a sauce or a soup, that percent difference may be unnoticeable. However, when measuring salt for a yeast bread or cake, the amount would be significant. The average commercial tablespoon holds 20 grams of table salt.

d. ***Portioning*** is distributing a food item into equal parts (e.g., 16 brownies per half-sheet pan or 24 cake servings per half-sheet pan) or serving an accurate amount of food using a tool for equal distribution. Commercial portioning tools stamp the number of portions per quart or an ounce equivalent on some part of the device. For instance, scoops stamp the portion per quart designation on the rotating vane. Examples are:

(1) Ladles are metal bowls attached to a long handle with a hook to keep the ladle from slipping into the pot. Ladles are used to portion soups, stews, and punch. Ladle size measurements represent a level ladle.

(2) Scoops (or dippers) consist of bowls on sturdy handles that have a thumb-operated rotating vane (strip of rigid metal) to release semi-solid foods or to shape foods. Scoops are widely used to accurately portion cookies, muffins, soft salads, cold salad sandwich filling, and ice cream. Scoop size measurements represent a level dipper.

(3) Rolling dough and bar cookie dividers are a series of round 2-inch blades (usually 6 blades) attached to an accordion-style handle with a thumbscrew lock that allows the user to adjust the tool to the pan size. The divider or marking tool is used to divide raw dough into

portions and to indicate cut marks for bars, cakes, and some pan salads and casseroles.

(4) Pie markers resemble a wheel with spokes for markers. Some have a handle in the center (where the wheel shaft would be) that marks pies for accurate portions; others have two loop handles on either side. Pie markers come in various sizes: 6-, 7-, 8-, 10- and 12-piece markers are common.

e. ***Thermometers*** are devices that measure the surface and internal temperature of food products and the environment. Temperature is measured to ensure food safety is maintained. Regular calibration of thermometers is important in maintaining proper readings. Many pieces of commercial and home kitchen equipment (e.g., ovens and refrigerators) are fitted with thermostats designed to automatically measure temperature and regulate the air at the desired temperature. Many types of thermometers (e.g., dial, probe, and digital) are used in the commercial kitchen, including:

(1) Room

(2) Probe type (instant-read) for internal temperatures; digital or mechanical dial type

(3) Infrared to measure the surface temperature

(4) Hanging type (space monitoring) for the oven, refrigerator, and freezer

(5) Candy

(6) Deep fat

f. A ***hygrometer*** is a device that measures the amount of moisture or humidity in the air. It is especially important in dry and cold storage locations. If a refrigerator or freezer is too moist, food will spoil due to bacteria and mold growth. If the unit is too dry, foods will dry out.

2. Separation tools are used to wash produce, to separate liquids from solids (cooked or raw), or to remove lumps. There are two extremes in separation tools: colanders (large holes) and sieves (air space separated by wire). They can be used to break down cooked foods into a puree.
   a. Strainers (pasta and all-purpose separation)
   b. Sieves (closely set air spaces for fine separation)
   c. Sifters (remove lumps and add air to dry ingredients)
   d. Colanders (used to wash produce or strain bulky foods, such as shrimp or lobster)
   e. Skimmers (remove scum and floating particles from soups and stews)
   f. Food mills and Chinois (remove produce skin from flesh, mash, and puree)
3. Turning and transfer tools are used to flip, scoop up, and move food items from one place to another.
   a. Tongs
   b. Spatulas (straight, offset)

c. Peels (wooden and metal tools to place and remove food from pizza, wood fire, and other ovens)
d. Turners (pancake-type, perforated)
e. Pot forks or meat forks
f. Ice scoops

4. Mixing tools are used to blend ingredients together.
   a. Paddles (hand wooden, polyethylene, stainless steel; mechanical agitators for bench mixers)
   b. Spoons (wooden, polyethylene, stainless steel, solid, slotted, and perforated)
   c. Whisks (rigid—wire and flat mechanical; flexible—balloon)
   d. Eggbeater
   e. Mixing bowls (glass or stainless steel)
   f. Pastry blender
5. Scraping tools are used to remove ingredients from smallwares and surfaces.
   a. Rubber spatulas
   b. Bench scrapers
   c. Dough cutters
   d. Bowl scrapers
   e. Vegetable brushes
6. Cutting tools are used to cut, chop, dice, mince, slice, and grate food items and to protect work surfaces.
   a. Vegetable peelers
   b. Graters and microplanes (hand held fine-toothed graters used for zest and spices)
   c. Single- and double-handle cheese cutters and cheese slicers
   d. Kitchen shears (poultry and shellfish)
   e. Mandolins (tabletop equipment with interchangeable blades to make thin, crinkled, and julienne cuts)
   f. Zesters, citrus peelers, and juicers (reamers)
   g. Corers (e.g., apple) and melon-ball cutters
   h. Sandwich spreaders (spatulas)
   i. Choppers (crescent-shaped, rolling mincers, herb choppers)
   j. Butter slicers and curlers
   k. Egg slicers
   l. Tomato spoons (remove pulp) and tomato knives (garnishes)
   m. Truffle slicers and cutter sets
   n. Cutters—ripple and pizza
   o. Garlic press
   p. Meat tenderizer

q. Cutting boards are tools used to protect the work surface. The polyethylene types are coded by color to prevent cross-contamination. For example:
   (1) Beige—Raw fish and shellfish
   (2) Red—Raw meats
   (3) Blue—Cooked foods
   (4) White—Dairy
   (5) Green—Produce
   (6) Yellow—Raw poultry

7. Specialty tools are used for pastry and garde-manger preparations.
   a. Rolling pins (e.g., wooden, glass, marble, or plastic)
   b. Pastry wheels
   c. Pastry brushes
   d. Pastry bags and tips
   e. Dough dockers
   f. Pie markers (ensure exact serving sizes of pies)
   g. Funnels

Teaching Strategy: *Provide physical samples of smallwares and hand tools. Use VM–A, VM–B, and VM–C to review. Use VM–D as a summary of the hand tools categories. Use VM–E, VM–F, and VM–G to review commercial kitchen hand tools. Use VM–H to highlight scoop equivalents and VM–I to highlight color-coded cutting boards. Use http://www.cookeryonline.com to show students more visual images of smallwares and hand tools. Use VM–J as a quiz in LS–A. Assign LS–A.*

Objective 2: Recognize quality characteristics of smallwares and hand tools.

Anticipated Problem: What are the quality characteristics for commercial kitchen smallwares and hand tools?

II. Quality characteristics of smallwares and hand tools

A. Safety, durability, and ease of use and care should be considered when choosing commercial kitchen smallwares and hand tools. The ***National Sanitation Foundation (NSF)*** is an organization that evaluates commercial kitchen equipment, smallwares, and hand tools to ensure they meet safety and sanitation standards in construction and installation. Those NSF standards are as follows:
   1. Coatings must be nontoxic and should not affect the foods that come in contact with the tool or equipment.
   2. All surfaces must be smooth.
   3. Tools and equipment must be easily cleaned.
   4. External and internal curves and corners must be rounded, smooth, and sealed.
   5. Debris must be easily cleaned from the tools and equipment.

6. Coatings and surfaces must be chip and crack resistant.

B. Materials and some quality characteristics have changed over time. When cooking was accomplished over open wood fires, the tools reflected that medium. The introduction of smooth, nonporous, and nontoxic materials makes today's food production safer, more efficient, and more appealing to the eye and pallet.

1. Smallwares and hand tools were once made from natural on-hand materials, such as:
   a. Stones
   b. Handmade pottery
   c. Wood
2. Most commercial food service kitchens now utilize the following materials for equipment, smallwares, and hand tools:
   a. Stainless steel
   b. Aluminum
   c. Polyethylene and other durable plastics

Teaching Strategy: *Use VM–K to review the characteristics of NSF-approved materials. Send student teams on a "hunt" to find laboratory items bearing the NSF blue seal. Have the student teams identify equipment, smallwares, and hand tools that may not pass the NSF safety and sanitation standards. For the most part, they would be looking for items that are cracked or chipped. At one time, some of the items may have been NSF-approved. Through excessive use, however, they now fall outside the standards for safety and sanitation.*

Objective 3: Demonstrate proper care of smallwares and hand tools.

Anticipated Problem: What are the proper steps in caring for smallwares and hand tools?

III. Smallwares and hand tool care

A. Cleaning and sanitizing of smallwares and hand tools, in an approved manner, is vital to avoiding the spread of bacteria and other food-borne illnesses. Hand tools especially have many small crevices, creases, and voids where debris may become stuck and difficult to clean and sanitize. Tools and equipment can look clean and still be covered with disease-causing (pathogenic) bacteria. Smallwares and hand tools eventually wear out or break, so it is important to replace them when signs of wear and tear are evident.

B. Cleaning and sanitizing methods

1. Hand washing steps: wash, rinse, and sanitize
   a. Step 1: It is necessary to scrape and rinse smallwares and hand tools. The items with stuck on or burned on food should be soaked.
   b. Step 2: The three-compartment sink should be cleaned and sanitized.

c. Step 3: The first sink should be filled with 110°F hot water. A dish detergent should be added, according to the manufacturer's amount per gallon.
d. Step 4: It is essential to wash thoroughly with a brush in the prescribed order (e.g., glass, flatware, knives and hand tools, bowls and smallwares, bake ware, and cookware). Wash water should be drained and refilled as needed.
e. Step 5: The second sink should be filled with 110°F hot water, and the item should be submerged to remove detergent.
f. Step 6: The third sink should be filled with 180°F hot water. A sanitizing agent (chlorine or iodine) should be added to the manufacturer's recommended amount per gallon of water. Too much can cause chemical contamination. Tools should be submerged for at least 30 seconds. (NOTE: Some sanitizing agents use lower temperature water in the third sink.)
g. Step 7: Smallwares and hand tools should air dry. Drying towels can harbor bacteria and contaminate the tools again.
h. Step 8: Smallwares and hand tools should be stored in designated areas to ensure sanitary conditions and easy access.

2. Commercial dishwashers use the same system (debris removal, wash, rinse, sanitize) to clean and sanitize smallwares and hand tools.

C. Commercial kitchen smallwares and hand tools are able to withstand the extended use and abuse that comes with a professional kitchen's demands. They are:

1. Well-constructed and heavy duty
2. Constructed with safety guards
3. Feel comfortable in the hand (not too small, not too large)
4. Easy to use
5. Easy to clean and sanitize

Teaching Strategy: *Conduct a practical examination of proper student sink and dishwasher procedures and protocols.*

Review/Summary. Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Questions at the ends of chapters in the textbook may also be used in the review/summary.

Application. Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

Evaluation. Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

Answers to Sample Test:

Part One: Matching

1. d
2. h
3. i
4. a
5. j
6. f
7. e
8. g
9. b
10. c

Part Two: Short Answer

1. a. dry
   b. sticky
2. a. probe thermometer
   b. digital thermometer
3. Answers will vary but should include four of the following NSF standards for commercial food service equipment, smallwares, and hand tools:
   a. Coatings must be nontoxic and should not affect the foods that come in contact with the tools or equipment.
   b. All surfaces must be smooth.
   c. Tools and equipment must be easily cleaned.
   d. External and internal curves and corners must be rounded, smooth, and sealed.
   e. Debris must be easily cleaned from the tools and equipment.
   f. Coatings and surfaces must be chip and crack resistant.

Part Three: Completion

1. measured
2. separation
3. portioning
4. weight, volume
5. turning and transfer
6. cutting
7. cross-contamination
8. washing, rinsing, sanitizing
9. sloping (or flared)
10. tart pans or flan forms or rings

Sample Test

Name _____

Smallwares and Hand Tools

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. smallwares
b. hand tools
c. National Sanitation Foundation (NSF)
d. cookware
e. bake ware
f. thermometers
g. hygrometer
h. portioning
i. volume
j. tare thumbscrew/button

_____1. A collection of pots and pans used for stovetop cooking

_____2. Distributing a food item into equal parts

_____3. The amount of space taken by a material

_____4. Glassware, flatware, dinnerware, pots and pans, table top items, bar supplies, food preparation utensils and tools, storage supplies, service items, and small appliances costing $500 or less

_____5. A device function that deducts the gross weight of the container from the weight of the ingredient

_____6. Devices that measure the surface and internal temperature of food products and the environment

_____7. Equipment used in ovens or on steam tables to cook, warm, or steam foods

_____8. A device that measures the amount of moisture or humidity in the air

_____9. Items that are held and used to prepare and serve food

____10. An organization that evaluates commercial kitchen equipment and tools to ensure they meet safety and sanitation standards in construction and installation

Part Two: Short Answer

Instructions: **Answer the following.**

1. Name two types of ingredients measured in dry measuring cups.

2. List two types of thermometers used in food service establishments to check the internal temperatures of food items.

3. List four commercial kitchen equipment, smallwares, and hand tool standards set by the NSF.

Part Three: Completion

Instructions: **Provide the word or words to complete the following statements.**

1. Time, temperature, humidity, volume, and weight are things that are _____ in a commercial kitchen.
2. Strainers, sieves, colanders, and skimmers are examples of _____ tools.
3. Scoops, ladles, and pie markers are examples of _____ tools.
4. An ingredient or a portion is more accurately measured by _____ than by _____.
5. Tongs, spatulas, meat forks, and peels are examples of _____ tools.
6. A garlic press, zester, corer, and microplane are examples of _____ tools.
7. Color-coded cutting boards prevent _____.
8. A three-compartment sink is necessary for safe and sanitary hand washing of smallwares and hand tools. The first sink is for _____, the second for _____, and the third for _____.
9. Sauté pans are small, round, and shallow pans with _____ sides for quick frying in a small amount of fat.
10. American pies are served from a sloping pie pan, whereas European bakers tend to use straight-sided _____.

SMALLWARES
COOKWARE EXAMPLES

Cookware is for stovetop cooking.

- **Pots** usually have straight sides and handles at the top edge for carrying.
  - Stockpots
  - Sauce pots
  - Steamers
  - Rondeaus or brazier pots
  - Poachers
  - Double-boilers
- **Pans** come in a variety of sizes and shapes (with straight or sloping sides).
  - Saucepans
  - Skillets and fry pans
  - Sauté pans (sauteuse)
  - Crêpe pans
  - Grill pans
  - Woks (wahks)

SMALLWARES
BAKE WARE EXAMPLES

Bake ware is equipment used in ovens or on steam tables to cook, warm, or steam foods. In general, bake ware is rectangular in shape, with straight sides and with or without loop handles.

♦ Sheet Pans and Bun Pans

- Full-sheet or bun pans (18 × 26 × 1 inch)
- Half-sheet pans (13 × 18 × 1 inch)
- Quarter-sheet pans (9 × 13 × 1 inch)
- Pizza pans

♦ Cake Pans

- Layer pans (8 × 2 and 9 × 2 inches in diameter)
- Jellyroll pans (15 × 10 × 1 inch)

Pie and Tart Pans

- Pie pans/plates (9 and 10 inches in diameter)
- Tart pans (from individual sizes to 22 × 4.5 inches in size to round shapes)
  - Flan rings and forms (e.g., open ring, square, or rectangle baked on a sheet pan)
  - Fluted flan rings with removable bottoms
  - Tinned loose-bottomed tart pans
  - Ceramic quiche molds
  - Tinned barquette pans (look like small boats)
  - Tinned individual pie-shaped forms

SMALLWARES
BAKE WARE EXAMPLES

Bake ware is equipment used in ovens or on steam tables to cook, warm, or steam foods. In general, bake ware is rectangular in shape, with straight sides and with or without loop handles.

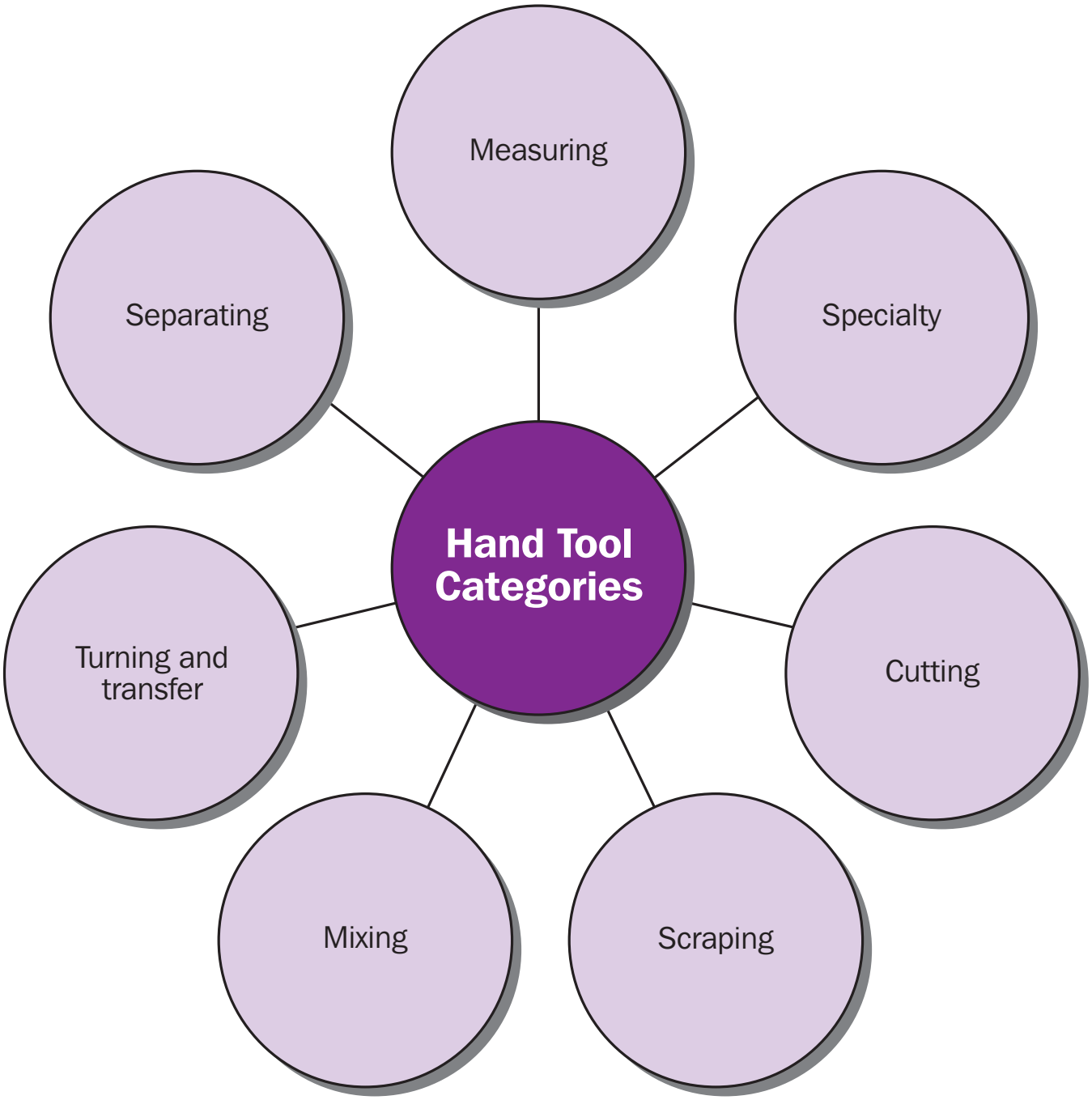
♦ Specialty Pans

- Angel food or tube pans (e.g., 10-inch diameter and 12-cup volume)
- Springform pans
- Muffin frames (e.g., 12- or 24-cup size)
- Loaf pans (e.g., 8-, 9-, or 10-inch length); bread straps and Pullman pans
- Also: Bundt, ladyfinger pans, madeleine tins, brioche molds, baba molds, tinned cornucopia molds, and savarin molds

♦ Roast and Hotel Pans

- Roast pans: Deep sides, 4- to 5-inches tall, with loop handles
- Hotel pans: Stainless steel with wide rims that fit standard steam table and salad bar openings

HAND TOOL CATEGORIES



HAND TOOL CATEGORIES AND EXAMPLES

Hand tools are items held and used to prepare and serve food.

Measuring

- Timers
- Scales are used to measure ingredients and foods by **weight** (the heaviness). An ingredient or a portion is more accurately measured by weight than by volume.
  - Baker's
  - Portion
  - Digital
  - Platform
- Measuring cups—Volume is the amount of space taken by a material.
  - Dry measures
  - Liquid measures
  - Measuring spoons

Portioning is distributing a food item into equal parts.

- Ladles
- Scoops (or dippers)
- Rolling dough and bar cookie dividers
- Pie markers

Thermometers are devices that measure the surface and internal temperature of food products and the environment.

- Room
- Probe-type (instant-read) for internal temperatures
- Infrared for surface temperatures
- Hanging type (for space monitoring), such as in ovens, refrigerators, and freezers
- Candy
- Deep fat

Hygrometers are devices that measure the amount of moisture or humidity in the air. Hygrometers are especially important in dry and cold storage locations. If a refrigerator or freezer is too moist, food will spoil due to bacteria and mold growth. If the unit is too dry, foods will dry out.

HAND TOOL CATEGORIES AND EXAMPLES

Hand tools are items held and used to prepare and serve food.

Separation tools are devices used to wash produce; to separate liquids from solids; or to remove lumps.

- Strainers
- Sieves (closely set air spaces for fine separation)
- Sifters (remove lumps and add air to dry ingredients)
- Colanders (wash produce or strain bulky foods, such as shrimp or lobster)
- Skimmers (remove scum and floating particles from soups and stews)
- Food mills and Chinois (or china caps)

Turning and Transfer Tools

- Tongs
- Spatulas (flat, offset)
- Peels
- Turners (pancake-type, perforated)
- Pot forks or meat forks
- Ice scoops

Mixing Tools

- Paddles (wooden, polyethylene, stainless steel; bench mixer agitators)
- Spoons (wooden, polyethylene, stainless steel, slotted, or pierced)
- Whisks (wire, flat mechanical, or balloon)
- Eggbeater
- Bowls (glass and stainless steel)
- Pastry blenders

HAND TOOL CATEGORIES AND EXAMPLES

Hand tools are items held and used to prepare and serve food.

- **Scraping Tools**
  - Rubber spatulas
  - Bench scrapers
  - Dough cutters
  - Bowl scrapers
  - Vegetable brushes
- **Cutting Tools** (other than knives)
  - Vegetable peelers
  - Graters and microplanes
  - Single- and double-handle cheese cutters or cheese slicers
  - Kitchen shears (poultry and shellfish)
  - Mandolins

- Zesters, citrus peelers, and juicers (reamers)
- Corers (e.g., apple) and melon-ball cutters
- Sandwich spreaders (spatulas)
- Choppers (crescent-shaped, rolling mincers, herb choppers)
- Butter slicers and curlers
- Egg slicers
- Tomato spoons (remove pulp) and tomato knives (garnishes)
- Truffle slicers and cutter sets
- Cutters—ripple and pizza
- Garlic presses
- Meat tenderizers
- Cutting boards (color coded to prevent cross-contamination)

◆ **Specialty Tools** (pastry and garde manger)

- Rolling pins
- Pastry wheels
- Pastry brushes
- Pastry bags and tips
- Dough dockers
- Pie markers (ensure exact serving size of pies)
- Funnels

SCOOP EQUIVALENTS

Approximate Scoop Equivalents per Quart

Size	Measure	Weight	Uses
100	scant 2 teaspoons		Tea cookies
70	scant 1 tablespoon	⅜ ounce	Drop cookies
60	1 tablespoon	½ ounce	Small cookies
40	1½ tablespoons	¾ ounce	Drop cookies
30	2 tablespoons+	1 to 1½ ounces	Drop cookies
24	2⅔ tablespoons+	1½ to 1¾ ounces	Cream puffs
20	3 tablespoons+	1¾ to 2 ounces	Muffins, cup cakes, and sauces
12	5 tablespoons (⅓ cup)	2½ to 3 ounces	Muffins, desserts, salads, and vegetables
8	8 tablespoons (½ cup)	4 to 5 ounces	Creamed foods
6	10 tablespoons	6 ounces	Luncheon salads

COLOR-CODED CUTTING BOARDS

Color-coded cutting boards prevent cross-contamination.

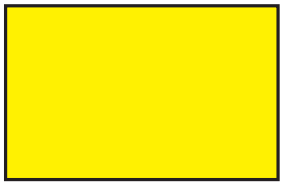
Beige—raw fish and shellfish

Red—raw meats

Blue—cooked foods

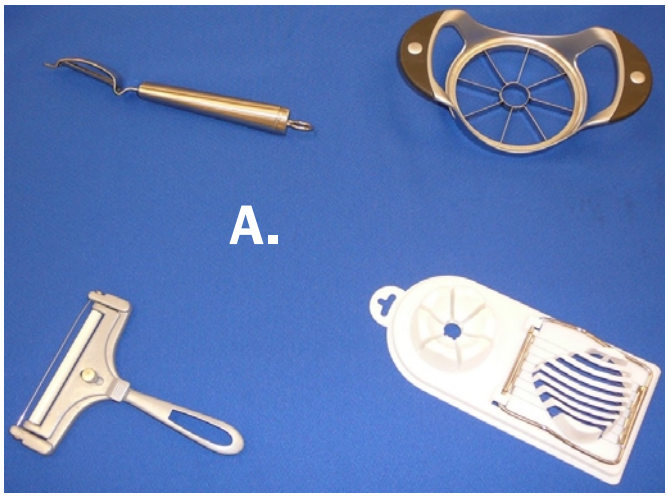
White—dairy products

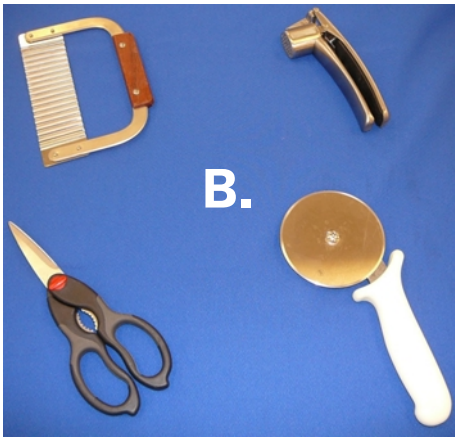
Green—fruits and vegetables

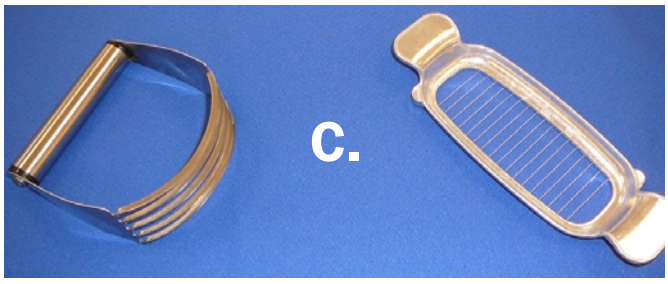


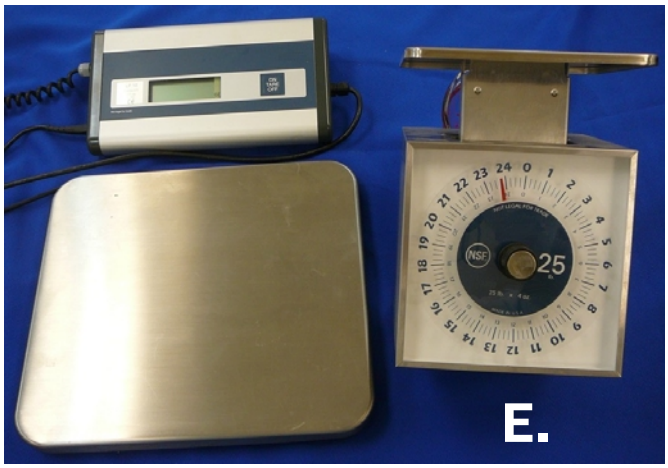
Yellow—raw poultry

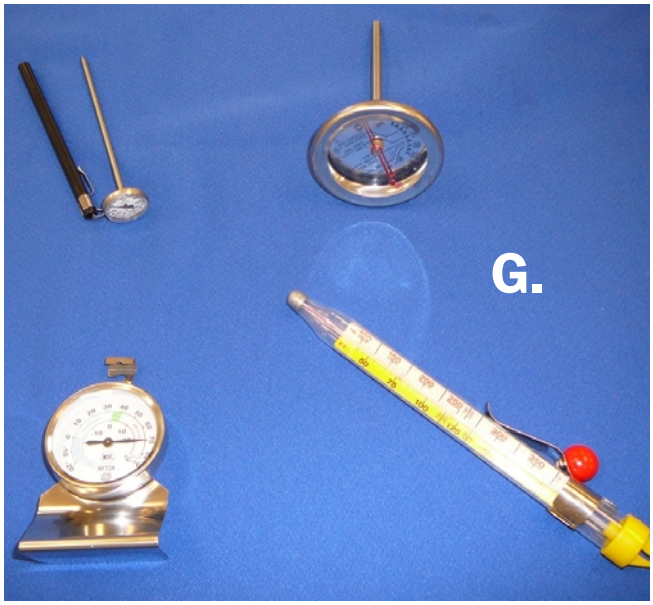
SMALLWARES AND HAND TOOLS

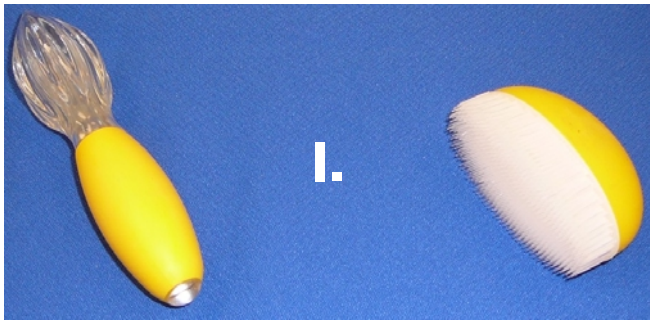


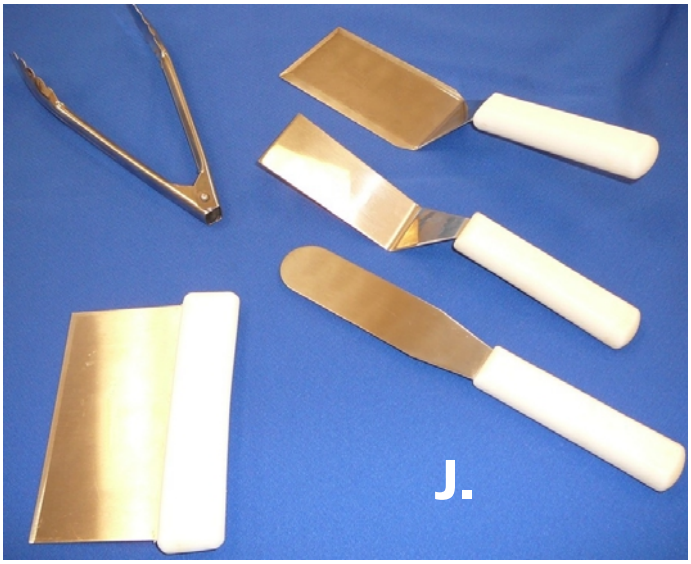


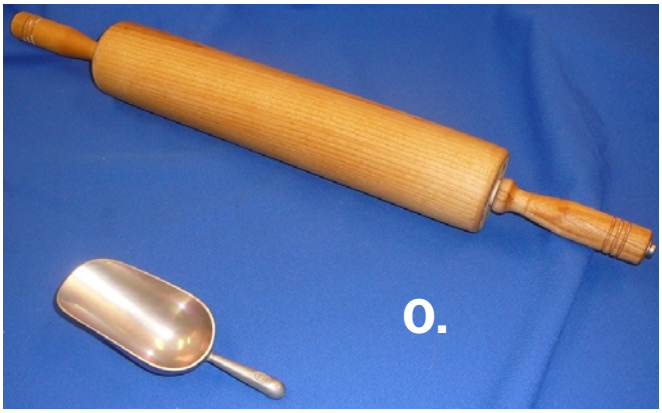












NSF SAFETY AND SANITATION STANDARDS FOR EQUIPMENT, SMALLWARES, AND HAND TOOLS

1. Coatings must be nontoxic and should not affect the foods that come in contact with the tool or equipment.
2. All surfaces must be smooth.
3. Tools and equipment must be easily cleaned.
4. External and internal curves and corners must be rounded, smooth, and sealed.
5. Debris must be easily cleaned from the tools and equipment.
6. Coatings and surfaces must be chip and crack resistant.

LS–A

Name _____

Identify Smallwares and Hand Tools

Purpose

The purpose of this activity is to identify commercial kitchen smallwares and hand tools.

Objectives

1. Identify smallwares and hand tools.
2. Use the commercial kitchen term for each piece of kitchen equipment.

Materials

- lab sheet
- copy of VM–J
- writing utensil

Procedure

1. Work individually to identify the smallwares and hand tools on VM–J. Most of the 15 images have more than one item. List the commercial kitchen term for each item in each image.

   A.

   B.

   C.

   D.

   E.

F.

G.

H.

I.

J.

K.

L.

M.

N.

O.

2. Turn in your completed lab sheet to your instructor.

Identify Smallwares and Hand Tools

A. Vegetable peeler, apple slicer, cheese slicer, egg slicer

B. Ripple cutter, garlic press, kitchen shears, pizza cutter (wheel)

C. Pastry blender, butter cutter

D. Garnishing tools: zester, citrus peeler, tomato spoon, tomato knife, and melon ball maker

E. Digital scale, portion scale

F. Liquid measure, dry measures, ladle, measuring spoons, portion scoop (dipper)

G. Thermometers: Probe or instant read, meat, cold storage, and candy

H. Colander, strainer or sieve, sifter

I. Juicer (reamer), vegetable brush

J. Tongs, bench scraper, two offset spatulas or turners, straight spatula

K. Solid and slotted spoons, wire whisk, meat or pot fork, rubber spatula, pastry brush

L. Stock pot, saucepan, skillet, or sauté pan

M. Sheet pans: full-sheet, half-sheet, layer cake pans, pie plates (pans), pizza pan

N. Cake pans: Angel food, tube, bundt; loaf, muffin frame, springform

O. Ice or bin scoop, rolling pin

Name _____

Select Appropriate Smallwares and Hand Tools

Purpose

The purpose of this activity is to put smallwares and hand tools to use.

Objectives

1. Identify the smallware and hand tools needed to produce a superior German Apple Cake.
2. Use proper cleaning and sanitation procedures.

Materials

- lab sheet
- German Apple Cake recipe printed or projected from http://allrecipes.com/recipe/german-apple-cake-i/detail.aspx
- ingredients needed for the selected recipe
- smallwares and hand tools for food preparation
- lab area for proper preparation, cleaning, and sanitation
- writing utensil

Procedure

1. Work in pairs.
2. Read the recipe. As you read, identify the smallwares and hand tools needed to complete the recipe. List those identified items in the space provided:

3. Gather the ingredients and smallwares identified to complete the recipe. Assign preparation tasks below.

4. Prepare the recipe according to the directions.
5. Evaluate each team's end product based on appearance, taste, moistness, crumb, and tunneling.
6. Share your list of smallwares and hand tools with the class.
7. Write a summary about how you selected the smallwares and hand tools to complete the recipe. Evaluate how important it was to have the right tool for each task. List the tools other teams used that your team did not use. Explain why those tools would or would not have changed your end result.

Select Appropriate Smallwares and Hand Tools

1. The German Apple Cake recipe suggested allows the student team to select various smallwares and hand tools for its preparation. The list may include:
   a. 9 × 13-inch cake pan
   b. Pastry brush (to grease the cake pan)
   c. Electric hand or stand mixer
   d. Dry measures
   e. Apple corer, paring knife, or vegetable peeler
   f. Sieve or sifter (confectioner's sugar dusting)
2. Please suggest or assign other cake formulas for student teams as multiple smallwares and hand tools are necessary for the entire class to prepare the same recipe. Other cake and coffeecake formulas are shown on http://allrecipes.com.
3. Teams that finish early could prepare the cream cheese icing rather than using the powdered sugar dusting.
4. Although the lab sheet suggests evaluating the end products, the intent of the lab is for teams to proficiently select the correct smallwares and hand tools. A discussion of the process each team used to select their items is suggested.