Republic of the Philippines
DEPARTMENT OF EDUCATION

K to 12 Basic Education Curriculum
Technology and Livelihood Education
Learning Module

COMMERCIAL COOKING

EXPLORATORY COURSE
Grades 7 and Grade 8

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What Is This Module About?

Welcome to the world of ***Commercial Cooking!***

This Module is an exploratory course which leads you to **Commercial Cooking** National Certificate Level II (NC II)[1]. It covers **4** common competencies that a Grade 7 / Grade 8 Technology and Livelihood Education (TLE) student like you ought to possess, namely:

1) Use use and maintain kitchen tools and equipment;
2) Perform mensuration and calculation;
3) Interpret kitchen layout, and
4) Practice occupational safety and health.

These **4** common competencies are covered separately in 5 Lessons . As shown below, each Lesson is directed to the attainment of one or two learning outcomes:

Lesson 1 – Use and maintain kitchen tools and equipment
- LO1. Utilize kitchen tools and equipment
- LO 2. Maintain kitchen tools, equipment and working area
- LO 3. Store and stack kitchen tools and equipment

Lesson 2 – Perform mensuartion and calculation
- LO 1. Carry out measurement and calculations in a required tasks
- LO 2. Calculate cost of production

Lesson 3 – Interpret kitchen lay-out
- LO1. Read and interpret kitchen plans
- LO2. Create kitchen lay-out

Lesson 4 – Practice occupational safety and health
- LO 1.Identify hazards and risks
- LO 2 Control hazards and risks

Your success in this exploratory course on **Commercial Cooking** is shown in your ability to perform the following at the end of this Module:

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[1]***NATIONAL CERTIFICATE (NC) is*** *a certification issued to individuals who achieved all the required units of competency for a national qualification as defined under the Training Regulations. NCs are aligned to specific levels within the PTQF.* ***(TESDA Board Resolution No. 2004-13, Training Regulations Framework)***

NATIONAL CERTIFICATE LEVEL *refers to the four (4) qualification levels defined in the Philippine TVET Qualifications Framework (PTQF) where the worker with:*

a. ***NC I*** *performs a routine and predictable tasks; has little judgment; and, works under supervision;*

b. ***NC II*** *performs prescribe range of functions involving known routines and procedures; has limited choice and complexity of functions, and has little accountability;*

How Do You Use This Module?

This Module has 4 Lessons. Each Lesson has the following:

- Learning Outcomes
- Performance Standards
- Materials
- References
- Definition of Terms
- What Do You Already Know?
  (Pretest)
- What Do You Need to Know?
  (Information Sheet)
- How Much Have You Learned?
  (Self-check)
- How Do You Apply What You Learned?
  (Activity Sheet /Operation Sheet /Job Sheet)
- How Well Did You Perform? (Scoring Rubric)
- What is your Score?
- How Do You Extend Your Learning?
  (Assignment)

To get the most from this Module, you need to do the following:

- Begin by reading and understanding the Learning Outcome/s and Performance Standards . These tell you what you should know and be able to do at the end of this Module.

- Find out what you already know by taking the Pretest then check your answer against the Answer Key. If you get 99 to 100% of the items correctly, you may proceed to the next Lesson. This means that you need not go through the Lesson because you already know what it is about. If you failed to get 99 to 100% correctly, go through the Lesson again and review especially those items which you failed to get.

- Do the required Learning Activities. They begin with one or more Information Sheets. An Information Sheet contains important notes or basic information that you need to know.
  After reading the Information Sheet , test yourself on how much you learned by means of the Self-check. Refer to the Answer Key for correction. Do not hesitate to go back to the Information Sheet when you do not get all test items correctly. This will ensure your mastery of basic information.

- It is not enough that you acquire content or information. You must be able to demonstrate what you learned by doing what the Activity / Operation /Job Sheet directs you to do. In other words, you must be able to apply what you have learned in real life.

- How well did you perform? Accomplish the Scoring Rubrics.

Each Lesson also provides you with references and definition of key terms for your guide. They can be of great help . Use them fully.

If you have questions, don't hesitate to ask your teacher for assistance.

LESSON 1

Use and maintain Kitchen tools and Equipment

LEARNING OUTCOMES:

At the end of this Lesson you are expected to do the following:

LO 1. Utilize kitchen tools and equipment;
LO 2. Maintain kitchen tools and equipment and working area;
LO 3. Store and stack kitchen tools and equipment; and
LO 4. Store and stack kitchen tools and equipment; and

Definition of Terms

Cleaning	a physical removal of visible soil and food.
Disinfectan	a substance used to destroy germs and diseases
Exterminate	to destroy totally
Filth	anything that is dirty
Grates	frames of iron bars for holding fuel while it burns
Infestation	the state of being infested as with parasites or vermin
Kitchen	a room especially set apart and containing the necessary utensils for cooking food.
Parts per million (PPM)	is commonly used as a measure of small levels of pollutants in air, water, body fluids, etc. Parts per million is the mass ratio between the pollutant component and the solution. Usually describes the concentration of something in water or soil. One ppm is equivalent to 1 milligram of something per liter of water (mg/l) or 1 milligram of something per kilogram soil (mg/kg).
Pedestal	a base or support
Sanitizer	a chemical agent used for cleansing and sanitizing surfaces and equipment.
Sanitizing	process of reducing number of harmful organisms to safe level on food contact services.
Stack	a case compose of several rows of shelves.

LEARNING OUTCOME 1

Utilize kitchen tools and equipment

PERFORMANCE STANDARDS

- Kitchen tools and equipment are identified based on their uses.
- Kitchen tools and equipment are used in accordance to its function

Materials

Kitchen tools
Kitchen equipment

What Do You Already Know?

Let us determine how much you already know about utilizing kitchen tools and equipment. Take this test.

Pretest LO 1

Direction: Identify the word/s that best describes the following statements. Write your answer on a separate sheet of paper.

1. It is the most popular, lightweight, attractive and less expensive materials of kitchen utensils and equipment.
2. A more complicated tool that may refer to a small electrical appliance.
3. A kitchen tool which is specifically designed for pulping garlic for cooking.
4. It is used to grate, shred, slice and separate foods.
5. A must for all types of kitchen tasks, from peeling an onion and slicing carrots, to carving a roast or turkey often referred to as cook's or chef's tools.
6. It is used to measure solids and dry ingredients.
7. These are used to measure smaller quantities of ingredients

8. A rubber or silicone tools to blend or scrape the food from the bowl
9. A special coating applied to the inside of some aluminum or steel pots and pans that helps food from not sticking to the pan.
10. A kitchen essentials used for creaming, stirring, and mixing that made of a hard wood.

What Do You Need To Know?

Read the Information Sheet 1.1 very well then find out how much you can remember and how much you learned by doing Self-check 1.1.

Information Sheet 1.1

Materials of kitchen utensils and equipment commonly found in the kitchen.

Any cook should be familiar with the correct utensils, devices and equipment in the kitchen. It is important to consider several things and not only the price when buying them. The job of cooking requires specific tools, utensils, and equipment for proper and efficient preparation of food. Each piece has been designed to accomplish a specific job in the kitchen.

The tools, utensils and equipment are made of different materials, each having certain advantages and disadvantages. The following lists are materials of kitchen utensils and equipment commonly found in the kitchen.

Aluminum is the best for all-around use. It is the most popular, lightweight, attractive and less expensive. It requires care to keep it shiny and clean. Much more, it gives even heat distribution no matter what heat temperature you have. It is available in sheet or cast aluminum. Since it is a soft metal, the lighter gauges will dent and scratch easily, making the utensil unusable. Aluminum turns dark when used with alkalis, such as potatoes, beets, carrots and other vegetables. Acid vegetables like tomatoes will brighten it.

Stainless Steel is the most popular material used for tools and equipment, but is more expensive. It is easier to clean and shine and will not wear out as soon as aluminum. Choose those with copper, aluminum or laminated steel bottoms to spread heat and keep the pot from getting heat dark spots. Stainless steel utensils maybe bought in many gauges, from light to heavy.

Glass is good for baking but not practical on top or surface cooking. Great care is needed to make sure for long shelf life.

Cast Iron is sturdy but must be kept seasoned to avoid rust. Salad oil with no salt or shortening can be rub inside and out and dry. Wash with soap (not detergent) before using.

Ceramic and heat-proof glass is used especially for baking dishes, casseroles, and measuring cups. Glass and ceramic conduct the heat slowly and evenly. Many of these baking dishes are decorated and can go from stove or oven to the dining table.

Teflon is a special coating applied to the inside of some aluminum or steel pots and pans. It helps food from not sticking to the pan. It is easier to wash and clean, however, take care not to scratch the Teflon coating with sharp instrument such as knife or fork. Use wooden or plastic spatula to turn or mix food inside.

Plastic and Hard Rubber are used for cutting and chopping boards, table tops, bowls, trays, garbage pails and canisters. They are much less dulling to knives than metal and more sanitary than wood. Plastics are greatly durable and cheap but may not last long.

Cooking Utensils List That Every Kitchen Needs

1. A **baster** is handy for returning some of the meat or poultry juices from the pan, back to the food. Basting brushes can be used for the same purpose, but they are also convenient for buttering the tops of breads and baked goods after they come out of the oven.

2. **Cans, bottles, cartoons opener** use to open a food tin, preferably with a smooth operation, and comfortable grip and turning knob.

3. **Colanders** also called a vegetable strainer are essential for various tasks from cleaning vegetables to straining pasta or tin contents.

4. **Cutting Boards** a wooden or plastic board where meats and vegetables can be cut.

5. **Dredgers –** used to shake flour, salt, and pepper on meat, poultry, and fish.

6. **Double boiler –** used when temperatures must be kept below boiling, such as for egg sauces, puddings, and to keep foods warm without overcooking.

7. **Emery boards/sharpening steel** – used to sharpen long knives.

8. **Flipper** use for turning hamburgers and other food items

9. **Funnels** – used to fill jars, made of various sizes of stainless steel, aluminum, or of plastic

10. **Garlic Press** is a kitchen tool which is specifically designed for the purpose of pulping garlic for cooking.

11. **Graters** used to grate, shred, slice and separate foods such as carrots, cabbage and cheese.

12. **Handy Poultry & Roasting Tools** make it easier to lift a hot roasted turkey from the roaster to the serving platter, without it falling apart.

13. **Kitchen Knives** often referred to as cook's or chef's tools, knives are a must for all types of kitchen tasks, from peeling an onion and slicing carrots, to carving a roast or turkey

14. **Kitchen Shears** They are practical for opening food packages, cutting tape or string to package foods or simply to remove labels or tags from items. Other cutting tools such as box cutters are just as handy, especially for opening packages.

15. **Measuring Cups, Spoons** Measuring tools are among the most important items found in any kitchen, since consistently good cooking depends upon accurate measurements. Measuring tools should be standardized. Measuring cups and spoons are also in the home kitchen. Scales are used to weigh materials of bigger volumes. These are delicate and precision instruments that must be handled carefully and are more dependable in terms of accuracy.

Commonly used measuring tools in the home or in commercial kitchens include the following:

- Measuring Cup for Dry Ingredients – is used to measure solids and dry ingredients, such as flour, fat and sugar. It is commonly made of aluminum or stainless material. Sizes range from 1, ½, ¾ and ¼ (nested cups) to one gallon. There are cups made of plastic and come in different colors, but could only be used for cold ingredients. They could warp, causing inaccurate measure.
- Measuring Cup for Liquid Ingredients - commonly made up of heat-proof glass and transparent so that liquid can be seen. Quantity of measure of liquid ingredient is different in a dry measuring cup.
- Portion scales - used to weigh serving portions from one ounce to one pound
- Scoops or dippers – used to measure serving of soft foods, such as fillings, ice cream, and mashed potato.
- Spoons come in variety of sizes, shapes, materials and colors. These are used to measure smaller quantities of ingredients called for in the recipe like: 1 tablespoon of butter or ¼ teaspoon of salt.
- Household Scales are used to weigh large quantity of ingredients in kilos, commonly in rice, flour, sugar, legumes or vegetables and meat up to 25 pounds.

16. **Pasta Spoon or Server** is use to transfer a little or much cooked pasta to a waiting plate, without mess. Pasta spoons are best used with spaghetti-style or other long pasta noodles; you can use a large slotted serving spoon for short pastas.

17. **Potato Masher** used for mashing cooked potatoes, turnips, carrots or other soft cooked vegetables.

18. **Rotary eggbeater –** used for beating small amount of eggs or batter. The beaters should be made up of stainless steel, and gear driven for ease in rotating

19. **Scraper**- a rubber or silicone tools to blend or scrape the food from the bowl; metal, silicone or plastic egg turners or flippers

20. **Seafood Serving Tools** make the task of cleaning seafood and removing the shell much easier. For cooking seafood, utensils will vary depending on what you are cooking.

21. **Serving spoons**- a utensil consisting of a small, shallow bowl on a handle, used in preparing, serving, or eating food.

22. **Serving Tongs** enables you to more easily grab and transfer larger food items, poultry or meat portions to a serving platter, to a hot skillet or deep fryer, or to a plate. It gives you a better grip and the longer the tongs, the better especially when used with a deep fryer, a large stock pot or at the barbecue.

23. **Soup Ladle** is used for serving soup or stews, but can also be used for gravy, dessert sauces or other foods. A soup ladle also works well to remove or skim off fat from soups and stews.

There are many kinds of knives, each with a specialized use

- **Butcher knife –** used to section raw meat, poultry, and fish. It can be used as a cleaver to separate small joints or to cut bones. Butcher knives are made with heavy blade with a saber or flat grind
- **French knife –** used to chop, dice, or mince food. Heavy knives have a saber or flat grind
- **Roast beef slicer** – used to slice roasts, ham, and thick, solid cuts of meats
- **Boning knife** – used to fillet fish and to remove raw meat from the bone
- **Fruit and salad knife** - used to prepare salad greens, vegetables, and fruits
- **Spatula** – used to level off ingredients when measuring and to spread frostings and sandwich fillings
- **Citrus knife –** used to section citrus fruits. The blade has a two-sided, serrated edge

- **Paring knife** – used to core, peel, and section fruits and vegetables. Blades are short, concave with hollow ground.

24. **Spoons –** solid, slotted, or perforated. Made of stainless steel or plastic, the solid ones are used to spoon liquids over foods and to lift foods, including the liquid out of the pot

25. **Temperature Scales** - used to measure heat intensity. Different thermometers are used for different purposes in food preparation – for meat, candy or deep-fat frying. Other small thermometers are hanged or stand in ovens or refrigerators to check the accuracy of the equipment's thermostat.

26. Two-tine fork – used to hold meats while slicing, and to turn solid pieces of meat while browning or cooking Made of stainless steel and with heat-proof handle.

27. **Vegetable peeler**. used to scrape vegetables, such as carrots and potatoes and to peel fruits. The best ones are made of stainless steel with sharp double blade that swivels.

28. **Whisks for Blending, Mixing** used for whipping eggs or batter, and for blending gravies, sauces, and soups. The beaters are made of looped steel piano wires which are twisted together to form the handle

29. **Wooden spoons** continue to be kitchen essentials because of their usefulness for used for creaming, stirring, and mixing. They should be made of hard wood

Equipment

More complicated tools are called equipment. They may refer to a small electrical appliance, such as a mixer, or a large, expensive, power-operated appliance such a range or a refrigerator.

Equipment like range, ovens, refrigerators (conventional, convection and microwave) are mandatory pieces in the kitchen or in any food establishment.

Refrigerators/Freezers are necessary in preventing bacterial infections from foods. Most refrigerators have special compartment for meat, fruits and vegetables to keep the moisture content of each type of food. Butter compartment holds butter separately to prevent food odors from spoiling its flavor. Basically, refrigerator or freezer is an insulated box, equipped with refrigeration unit and a control to maintain the proper inside temperature for food storage.

Auxiliary equipment like griddles, tilting skillets, broilers/grills, steamers, coffee makers, deep-fat fryers, wok, crockery, cutting equipment (meat slicer, food choppers, grinders) mixers and bowls, pots and pans are utilized most commonly in big food establishments, some with specialized uses and some are optional.

Microwave Ovens have greatly increased their use in the food industry. Foods can be prepared ahead of time, frozen or refrigerated during the slack periods, and cooked or heated quickly in microwave ovens

Blenders are used to chop, blend, mix, whip, puree, grate, and liquefy all kinds of food. A blender is a very useful appliance. They vary in the amount of power (voltage/wattage). Others vary and do not do the same jobs.

How Much Have You Learned?

Self-Check 1.1

Direction: On the third column draw a star ☆ if the statement/s in column A match with column B and if not write the correct word/s that best describe the statement/s .

A	B	C
1. It is the most popular material used for tools and equipment, but is more expensive.	Aluminum	
2. It is a greatly durable and cheap material of kitchen utensils but may not last long	Glass	
3. An essential utensil for various tasks from cleaning vegetables to straining pasta or tin contents.	Colander	
4. Used to level off ingredients when measuring dry ingredients	Scraper	
5. Use for turning food items	Flippper	
6. Commonly made up of heat-proof glass and transparent so that liquid can be seen when measuring	Measuring Cup for Liquid Ingredients	
7. It make the task of cleaning seafood and removing the shell much easier.	Seafood Serving Tools	
8. Enables you to more easily grab and transfer larger food items, poultry or meat portions to a serving platter, to a hot skillet or deep fryer, or to a plate	Serving spoons	
9. Used for whipping eggs or batter, and for blending gravies, sauces, and soups.	Pastry blender	
10. Used to measure heat intensity.	Temperature scales	

Refer to the Answer Key. What is your score?

How Do You Extend Your Learning?

On your notebook list down all the utensils and equipment you can find in your kitchen. Identify the materials of your kitchen tools and equipment. Follow the format below

KITCHEN UTENSILS	MATERIAL
1.	
2.	
3.	
4.	
5.	

How Do You Apply What You Have Learned?

Show that you learned something by doing this activity

Activity Sheet 1.1

Role Playing
The class willl be divided into 5 groups.
Each group will prepare a short skit demonstrating the proper use of kitchen utensils.

How Well Did You Perform?

Find out by accomplishing the Scoring Rubric honestly and sincerely. Remember it is your learning at stake!

	Score/Rate
Demonstrated and identified 15 kitchen utensils	100
Demonstrated and identified 14 kitchen utensils	95
Demonstrated and identified 13 kitchen utensils	90
Demonstrated and identified 12 kitchen utensils	85
Demonstrated and identified 11 and below kitchen utensils	80

LEARNING OUTCOME 2

Maintain kitchen tools, equipment and working area

PERFORMANCE STANDARDS

- Chemicals are selected and used for cleaning and/or sanitizing kitchen equipment and utensils
- Equipment and/or utensils are cleaned and/or sanitized safely and according to manufacturer's instructions
- Cleaning equipment are stored safely in the designated position and area

Materials

Cleaning agents
Chemical sanitizers
Cleaning tools

What Do You Already Know?

Let us determine how much you already know about maintaining kitchen tools, equipment and working area. Take this test.

Pretest LO 2

Enumerate the following

1-4 Categories of cleaning agents
5-7 Approved chemical sanitizers
8-10 Factors influence the effectiveness of chemical sanitizers
11-15 Steps in cleaning kitchen premises

What Do You Need To Know?

Read the Information Sheet 2.1 very well then find out how much you can remember and how much you learned by doing Self-check 2.1.

Information Sheet 2.1

CLEANING AND SANITIZING

Cleaning and sanitizing procedures must be part of the standard operating procedures that make up your food safety program. Improperly cleaned and sanitized surfaces allow harmful microorganisms to be transferred from one food to other foods.

Cleaning is the process of removing food and other types of soil from a surface, such as a dish, glass, or cutting board. Cleaning is done with a cleaning agent that removes food, soil, or other substances. The right cleaning agent must be selected because not all cleaning agents can be used on food-contact surfaces. *(A food-contact surface is the surface of equipment or utensil that food normally comes into contact.)* For example, glass cleaners, some metal cleaners, and most bathroom cleaners cannot be used because they might leave an unsafe residue on the food contact surface. The label should indicate if the product can be used on a food-contact surface. The right cleaning agent must also be selected to make cleaning easy. Cleaning agents are divided into four categories:

1. **Detergents –** Use detergents to routinely wash tableware, surfaces, and equipment. Detergents can penetrate soil quickly and soften it. Examples include dishwashing detergent and automatic dishwasher detergents.

2. **Solvent cleaners –** Use periodically on surfaces where grease has burned on. Solvent cleaners are often called degreasers.

3. **Acid cleaners** -- Use periodically on mineral deposits and other soils that detergents cannot remove. These cleaners are often used to remove scale in ware washing machines and steam tables.

4. **Abrasive cleaners** -- Use these cleaners to remove heavy accumulations of soil that are difficult to remove with detergents. Some abrasive cleaners also disinfect. Clean food-contact surfaces that are used to prepare potentially hazardous foods as needed throughout the day but no less than every four hours. If they are not properly cleaned, food that comes into contact with these surfaces could become contaminated.

Sanitizing is done using heat, radiation, or chemicals. Heat and chemicals are commonly used as a method for sanitizing in a restaurant; radiation rarely is. The item to be sanitized must first be washed properly before it can be properly sanitized. Some chemical sanitizers, such as chlorine and iodine, react with food and soil and so will be less effective on a surface that has not been properly cleaned.

Sanitizing Methods

1. **Heat.** There are three methods of using heat to sanitize surfaces – steam, hot water, and hot air. Hot water is the most common method used in restaurants. If hot water is used in the third compartment of a three-compartment sink, it must be at least 171oF (77oC). If a high-temperature ware washing machine is used to sanitize cleaned dishes, the final sanitizing rinse must be at least 180oF (82oC). For stationary rack, single temperature machines, it must be at least 165oF (74oC). Cleaned items must be exposed to these temperatures for at least 30 seconds.

2. **Chemicals.** Chemicals that are approved sanitizers are chlorine, iodine, and quaternary ammonium. Different factors influence the effectiveness of chemical sanitizers. The three factors that must be considered are:

   - **Concentration** -- The presence of too little sanitizer will result in an inadequate reduction of harmful microorganisms. Too much can be toxic.

   - **Temperature** -- Generally chemical sanitizers work best in water that is between 55oF(13oC) and 120oF (49oC).

   - **Contact time** -- In order for the sanitizer to kill harmful microorganisms, the cleaned item must be in contact with the sanitizer (either heat or approved chemical) for the recommended length of time.

Sanitizer Testing

Every restaurant must have the appropriate testing kit to measure chemical sanitizer concentrations. To accurately test the strength of a sanitizing solution, one must first determine which chemical is being used -- chlorine, iodine, or quaternary ammonium. Test kits are not interchangeable so check with your chemical supplier to be certain that you are using the correct kit. The appropriate test kit must then be used throughout the day to measure chemical sanitizer concentrations.

Advantages and Disadvantages of Different Chemical Sanitizers

Chemical	Concentration	Contact Time	Advantage	Disadvantage
Chlorine	50 ppm in water between 75 and100^{o}F	7 seconds	Effective on a wide variety of bacteria; highly effective; not affected by hard water; generally inexpensive	Corrosive, irritating to the skin, effectiveness decreases with increasing pH of solution; deteriorates during storage and when exposed to light; dissipates rapidly; loses activity in the presence of organic matter
Iodine	12.5-25 ppm in water that is at least 75oF	30 seconds	Forms brown color that indicates strength; not affected by hard water; less irritating to the skin than is chlorine; and activity not lost rapidly in the presence of organic matter.	Effectiveness decreases greatly with an increase in pH (most active at pH 3.0; very low acting at pH 7.0); should not be used in water that is at 120oF or hotter; and might discolor equipment and surfaces.
Quaternary Ammonium Compouds	U to 200 ppm in water that is at least 75oF	30 seconds	Nontoxic, odorless, colorless, noncorrosive, nonirritating; stable to heat and relatively stable in the presence of organic matter; active over a wide pH range	Slow destruction of some microorganisms; not compatible with some detergents and hard water

How Much Have You Learned?

Self-Check 2.1

Complete the following table

Chemical	Advantage	Disadvantage
Chlorine	1.	1. 2.
Iodine	1. 2.	1. 2.
Quaternary Ammonium Compouds	1. 2.	1.

Refer to the Answer Key. What is your score?

Information Sheet 2.2

Cleaning and sanitizing utensils

There are three steps needed to effectively clean and sanitize utensils:

- washing;
- sanitizing; and
- drying.

Utensils such as cutting boards, bowls and knives need to be thoroughly washed in warm soapy water. After washing, the utensils should look clean and there should be no food or anything else visible on them. Effective cleaning will remove most of the dangerous bacteria present. Sanitising will then kill any that might remain.

A dishwasher is very effective at sanitizing if it has a hot wash and drying cycle. If you do not have a dishwasher, you will need to sanitise in a sink using a chemical sanitiser or very hot water. If using a chemical sanitizer such as a sodium hypochlorite– or quaternary ammonium–based solution, ensure that it can be safely used for sanitizing eating, drinking and cooking utensils. Follow the instructions on the container carefully, as different sanitizers work in different ways. If you are using very hot water, take extra care to avoid being scalded. All utensils must then be thoroughly dried before they are re-used. Air-drying is best but tea towels can be used if they are clean.

If you are washing up at an event being held outdoors, make sure you have access to plenty of hot water. If hot water is not available, disposable eating and drinking utensils should be used and enough cooking utensils provided to last the duration of the event so that washing up is not necessary.

How Much Have You Learned?

Self-Check 2.2

Put a check (√) mark if the statement is correct and an (X) mark if incorrect. Write your answer on a separate sheet of paper.

1. Utensils need to be thoroughly washed in cold soapy water.
2. Follow the instructions on the sanitizer's container carefully.
3. All utensils must then be thoroughly dried before they are re-used.
4. Cleaning will remove most of the dangerous bacteria present in the utensils.
5. Chemical sanitiser or very hot water were used in absence of dishwasher.

Refer to the Answer Key. What is your score?

Information Sheet 2.3

Cleaning kitchen premises

Cleaning your kitchen regularly is important not only to keep it looking its best, but also to remove all of the germs and bacteria that accumulate regularly in the kitchen area. There are several surfaces around the kitchen, and by making a homemade versatile cleaning solution, you can easily clean most of the surfaces with one basic mixture of household ingredients that are probably already in your kitchen cupboards.

Things You'll Need

- Broom
- Cleaning rags
- Bucket

Instructions

1. Collect loose dust by sweeping the kitchen floor daily with a broom or static sweeper and wiping down counter tops, tables and other surfaces with a cleaning rag. To remove sticky buildup, wipe with a damp cleaning rag and wipe a damp mop over your kitchen floor.
2. Mix 1 gallon warm water in a bucket with 1/2 cup white vinegar and 1 tsp. dish soap. Dip your mop into the bucket, wring the mop out and wipe across your kitchen floors. The diluted vinegar solution makes it safe for any kitchen floor surface while still strong enough to clean and disinfect. The dish soap assists in cutting through any food residue that may be on the kitchen floor. Let your floor air dry after cleaning.

3. Make an all-purpose cleaner in a spray bottle. Combine 3 cups warm water with 1/2 cup white vinegar and 1 tsp. dish soap.
4. Spray this solution onto kitchen surfaces and wipe off with a damp cleaning rag. This works well on any type of kitchen surface including cabinetry, sinks, tables, counters and any other area that requires cleaning.
5. Fill a few bowls with about 1/2 cup each of baking soda. Place these around your kitchen to absorb odor and keep the kitchen smelling fresh. Open windows to let fresh air circulate, which is especially useful when cooking strong-smelling foods.

How Much Have You Learned?

Self-Check 2.3

Arrange the following steps chronologically. Use **A** for the first step, **B** for second and so on. Write your answer on a separate sheet of paper.

1. Prepare diluted vinegar solution in a bucket. Dip your mop into the bucket, wring the mop out and wipe across your kitchen floors.
2. Spray all-purpose cleaner onto kitchen surfaces and wipe off with a damp cleaning rag.
3. Collect loose dust by sweeping the kitchen floor daily with a broom or static sweeper and wiping down surfaces with a cleaning rag.
4. Fill a few bowls with about 1/2 cup each of baking soda. Place these around your kitchen to absorb odor and keep the kitchen smelling fresh.
5. Make an all-purpose cleaner in a spray bottle

Refer to the Answer Key. What is your score?

LEARNING OUTCOME 3

Store and Stack kitchen tools and equipment

PERFORMANCE STANDARDS

- Cleaned equipment and utensils are stored or stacked safely and in the designated place
- Cleaning equipment are used safely in accordance with manufacturer's

Materials

Actual kitchen tools and equipment
Storage room/storage cabinet
Drawers

What Do You Already Know?

Let us determine how much you already know about the use farm tools and equipment. Take this test.

Pretest LO 3

Direction: Fill in the blanks with word or group of words to complete the sentences below.

1. After cooking the ingredients, __________ all used mixing bowls, spatulas, measuring spoons and cups and mixer accessories in a tub of warm water.
2. Use a damp __________ to wipe off all cake mix splatter from the mixer.
3. Return electric mixers and other electronic equipment to their designated ___________ places.

4. Make sure all wooden spoons and accessories are _______ before storing.

5. Proper storage and handling of cleaned and sanitized equipment and utensils is very important to prevent _______________prior to use.

What Do You Need To Know?

Read the Information Sheet 1.1 very well then find out how much you can remember and how much you learned by doing Self-check 1.1.

Information Sheet 3.1

How to Clean and Store Cooking Tools and Equipment

1. After measuring and mixing ingredients, soak all used mixing bowls, spatulas, measuring spoons and cups and mixer accessories in a tub of warm water (add a small amount of dishwasher detergent to help start the cleaning). Drop soiled items in the soak as soon as you are through using them. They will be easier to wash later on.

2. Use a damp washcloth to wipe off all cake mix splatter from the mixer. While you're at it, wipe off any stray spatter from the countertops and nearby areas. If necessary, finish off with a dry dishcloth.

3. Return electric mixers and other electronic equipment to their designated storage spaces.

4. After cooking, soak used cake pans and muffin tins in warm water with dishwashing solution to soften the baked-on or burnt food.

5. Wash all used baking items and accessories by either handwashing or loading in a dishwasher (if dishwasher-safe).

6. Dry all baking tools and equipment by air-drying on a drying rack or wiping with a dry dishcloth. Make sure all wooden spoons and accessories are dry before storing.

7. Store all tools and equipment in their designated places. Put frequently used items in conveniently accessible locations. Gather and secure electrical cords to prevent entanglement or snagging.

8. Proper Storage and Handling. Proper storage and handling of cleaned and sanitized equipment and utensils is very important to prevent recontamination prior to use.

   Cleaned and sanitized equipment and utensils must be:

   • stored on clean surfaces; and

   • handled to minimize contamination of food contact surface.

10 Steps for Organizing Kitchen Cabinets

One easy and satisfying place to start is kitchen cabinets.

1. Pretend it has a glass door on it and everyone is going to see what's inside from now on.
2. Take a look at the photos below for inspiration.
3. Remove EVERYTHING and scrub the shelves with some soapy water.
4. If your a contact-paper type of person, rip out the old and replace it with new. There are some really cute ones out there lately; I've seen them at Target (please share in the comments section if you have another good source).
5. Take anything you don't use anymore.
6. Think about what you reach for the most often and make sure it gets a position that's easy to reach.
7. Arrange everything in a composition that makes you happy. You're on your way.
8. Perhaps take a cabinet full of glasses and line them up by color. Make sure all of the fronts are facing out and straight, Jeff Lewis-style.
9. Take a step back after one shelf is done.
10. Make someone else come look at what you've done.

Proper Storage of Cleaning Equipment

Storage of Washed Utensils

1. They should be stored in a clean dry place adequately protected against vermin and other sources of contamination
2. Cups, bowls, and glasses shall be inverted for storage.
3. When not stored in closed cupboards or lockers, utensils and containers shall be covered or inverted whenever practicable. Utensils shall be stored on the bottom shelves of open cabinets below the working top level.
4. Racks, trays and shelves shall be made of materials that are imperious, corrosive-resistant, non-toxic, smooth, durable and resistant to chipping.
5. Drawers shall be made of the same materials and kept clean. Full-lined drawers are not acceptable, but the use of clean and removable towels for lining drawers is acceptable

6.

Below are pictures showing proper storage and stacking of tools, utensils and equipments.

Proper stacking of glassware, chinaware and silverware

Stacking and storing of spices, herbs and other condiments

Stacking and storing of spices, herbs and other condiments

Storage of bottled and canned food items and other condiments

Storage of equipments , tools utensils and other implements

Stacking and storage of chinaware.

How Much Have You Learned?

Self-Check 1.1

Direction: .Answer the following questions:

1. Why it is important to clean, sanitize, and store equipment properly?
2. Enumerate ways on the proper storage of cleaning equipment.

Refer to the Answer Key. What is your score?

How Do You Apply What You Have Learned?

Show that you learned something by doing this activity

Activity Sheet 1.1

Visit your school canteen. Observe how canteen staff store and stack kitchen tools and equipment. Take note of your observation and make comments/suggestion on how to improve their storing and stacking procedures.

How Well Did You Perform?

Find out by accomplishing the Scoring Rubric honestly and sincerely. Remember it is your learning at stake!

ACCURACY (100%)	SCORING CRITERIA
Demonstrated and perform 5 proper ways of storing and stacking	

tools and equipment	
Demonstrated and perform 4 proper ways of storing and stacking tools and equipment	
Demonstrated and perform 3 proper ways of storing and stacking tools and equipment	
Demonstrated and perform 2 proper ways of storing and stacking tools and equipment	
Demonstrated and perform 1 proper ways of storing and stacking tools and equipment	
Failed to demonstrate and perform any storing and stacking procedures of tools and equipment	

Congratulations! You did a great job! Rest and relax a while then move on to the next lesson. Good luck!

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- June Payne, Palacio, Monica Theis, INTRODUCTION TO FOOD SERVICE, 128-130
- Mary Frey Ray. Evelyn Jones Lewis. **Exploring Professional Cooking,** Revised, Chas A. Bennet Co., Inc., Peoria, Illinois 61614
- Sonia Y. de Leon, Libia L. Chavez, Virginia S. Claudia, Matilde P. Guzman, et al., BASIC FOODS FOR FILIPINOS, 95-100
- How to Clean and Store Baking Tools and Equipment | eHow.com http://www.ehow.com/how_4737453_clean-store-baking-tools-equipment.html#ixzz1sMoZ00Jd

LESSON 2

Carry out measurements and calculations

LEARNING OUTCOMES:

At the end of this Lesson you are expected to do the following:

LO 1. Carry out measurements and calculations in a required task; and
LO 2. Calculate cost of production.

LEARNING OUTCOME 1

Carry out measurements and calculations in a required task; and

PERFORMANCE STANDARDS

1. Numerical computations are self-checked and corrected for accuracy.
2. Identified and converted systems of measurement according to recipe requirements.
3. Measured ingredients according to recipe requirement

What Do You Already Know?

Let us determine how much you already know about the use farm tools and equipment. Take this test.

Pretest LO 1

I. Complete the table below

2 tablespoons	___(1)___ fluid oz	30 ml.
1 cup	8 fluid ounces	___(2)___ ml.
___(3)___ oz	220 g	4 inches
2 ½ fluid ounces	85 ml	_(4)___ teaspoon
250 ^{O}F	_(5)___ ^{O}C	

II. Directions: Fill the blanks with the correct word or group of words that make the statement complete and correct.

1. Ingredients which measure by volume and by weight demand ______________________ measuring tools or equipment.

2. Refrigerators are operated by electricity. The unit that does the ___________is underneath the box behind the grill.

3. In preparing foods on the range or in the fryer, heat is transferred by________________.

4. Brown sugar is ______________ into the measuring cup before leveling off.

5. Spring scales should be adjusted so that pointer is at __________.

What Do You Need To Know?

Read the Information Sheet 1.1 very well then find out how much you can remember and how much you learned by doing Self-check 1.1.

Information Sheet 1.1

Different people may use the identical recipe for molded desserts, all of their molded desserts could turn out differently because of different measuring and mixing techniques. The following section presents some important measuring equivalents, tables and conversions.

TABLES OF WEIGHTS AND MEASURE

How To Measure Liquids

CUPS	U.S.	METRIC
2 tablespoons	1 fluid ounces	30 ml.
¼ cup	2 fluid ounces	60 ml,
	3 fluid ounces	90 ml.
½ cup	4 fluid ounces	125 ml.
	5 fluid ounces	150 ml.
	5 ½ fluid ounces	170 ml.
¼ cup	6 fluid ounces	185 ml.
	7 fluid ounces	220 ml.
1 cup	8 fluid ounces	250 ml.
2 cups	16 fluid ounces (1 pint)	500 ml.

2 ½ cups	20 fluid ounces	625 ml.
4 cups	32 fluid ounces (1 quart)	1 liter

HOW TO MEASURE DRY INGREDIENTS
QUICK CONVERSIONS

1/2 oz	15 g	¼ inch	5 mm
1 oz	30 g	½ inch	1 cm
2 oz	60 g	¾ inch	2 cm
3 oz	90 g	1 inch	2.5 cm
4 oz (1/4 lb)	125 g	2 inches	5 cm
5 oz	155 g	2 ½ inches	6 cm
6 oz	185 g	3 ¼ inches	8 cm
7 oz	220 g	4 inches	10 cm
8 oz (1/2 lb)	250 g	5 inches	12 cm
9 oz	280 g	6 inches	15 cm
10 oz	315 g	7 inches	18 cm
11 oz	345 g	8 inches	20 cm
12 oz (3/4 lb)	375g	9 inches	22 cm
13 oz	410 g	10 inches	25 cm
14 oz	440 g	11 inches	28 cm
15 oz	470 g	12 inches (1 foot)	30 cm
16 oz (l lb)	500 g	18 inches	46 cm
24 oz (1 ½ lbs)	750 g	20 inches	50 cm
32 oz (2 lbs)	1 kg	24 inches (2 feet)	61 cm
		30 inches	77 cm

USING CUPS AND SPOONS
All cup and spoon measurement are level

¼ cup	2 fluid ounces	60 ml	1/4/ teaspoon	1 ml
1/3 cup	2 ½ fluid ounces	85 ml	1/2 teaspoon	2.5 ml
½ cup	4 fluid ounces	125 ml	1 teaspoon	5 ml
1 cup	8 fluid ounces	250ml	1 tablespoon	15 ml

OVEN TEMPERATURES

FAHRENHEIT (^{O}F)	CELCIUS (^{O}C)	TEMPERATURES
250	120	Very Slow

300	150	Slow
325-350	160-180	Moderately Slow
375-400	190-200	Moderate
425-450	220-230	Moderately Hot
475-500	250-260	Hot

Measuring Ingredients Correctly

Accurate techniques in measuring are as important as the tools for measuring. Therefore, always observe the following procedures:

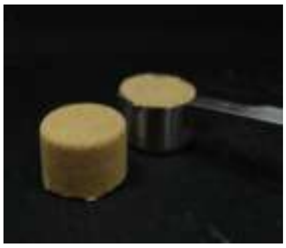
- Rice and flour. Fill the cup to overflowing, level-off with a spatula or with a straight-edged knife

- Sifted flour. Most cake recipes call for sifted flour. In this case, sift flour 2 or 3 times. Spoon into the cup overflowing, level off with a spatula.

- Refined sugar. Sift sugar once to take out lumps, if any. Spoon into cup and level off with a spatula. Do not pack or tap the sugar down.

- Brown sugar. Pack into cup just enough to hold its shape when turned out off cup. Level off with a
  spatula before emptying.





- Level a measuring spoon with straight edge of a knife to measure small amounts of salt, pepper, leavening agents or solid fats.

- Liquid ingredients. liquid measuring cup -- a glass or plastic cup with graduated markings on the side. Place the cup on a flat, level surface. Hold the cup firmly and pour the desired amount or liquid into the cup.Lean over and view the liquid at eye level to make sure it is the proper amount.

- Check and calibrate timers/thermometers, scales and other measuring devices according to manufacturer’s manual before using.

- Ingredients which measure by volume and by weight demand standardized measuring tools and equipment.
- Do not shake the dry measuring cup to level off dry ingredients.
- It is easier to weigh fat, butter, margarine if bought in pre-measured sticks. If fat does not come in pre-measured sticks, use a scale to weigh the needed amount.
- Liquids should be poured into cup in desired level. Cup should stand on a flat surface.
- Spring scales should be adjusted so that pointer is at zero (0). Place pan, bowl, or piece of waxed paper on scale to hold ingredient to be measured.
- When using balance scales, place the pan on the left-hand side of the balance and the pan weight on the right-hand side. Add the required weights to the right-hand side and adjust the beam on the bar so that the total is the weight needed.

- Ranges, sometimes called stoves, provide heat for cooking on top and in the oven. The controls for range heat must be accurate and easy to operate. Tools and utensils needed for cooking on the range and work space should be within easy reach.
- Learn to match the size of pan to the size of the unit and to select the right amount of heat for the cooking job to be done.
- In microwave cooking, time schedules must be followed exactly because every second is important. The microwaves shut off automatically when the door is opened.
- Refrigerators are operated by electricity. The unit that does the cooling is underneath the box behind the grill.
- Dishwashers are a great help if food is rinsed from dishes before stacking them. Follow the plan for stacking as suggested in the direction by manufacturer’s manual.
- Mixers are the most useful machines in commercial kitchens and even at home. It is good for making salad dressings, sandwich fillings, for sauces, mashing potatoes, beat batter and eggs. Attachments are also available to chop, whip, squeeze out juice, and make purees.
- Coffee makers mostly are automatic, requiring only the measurement of coffee and water.
- In preparing foods on the range or in the fryer, heat is transferred by ***conduction.***

How Much Have You Learned?

Self-Check 1.1

Analogy

1. ¼ cup : 60 ml
   1/3 cup : _____ ml

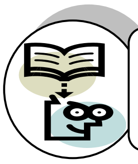
2. 1 oz 30 g
   1 ½ oz _____g

3. ¼ inch — 5 mm
¾ inch — _____mm

4. 1 teaspoon — 5 ml
¼ teaspoon — _____ml

5. 250 ^{O}F — 120 ^{O}C
125 ^{O}F — _____ ^{O}C

Refer to the Answer Key. What is your score?



What Do You Need To Know?

Read the Information Sheet 1.1 very well then find out how much you can remember and how much you learned by doing Self-check 1.1.

Information Sheet 1.2

How many times have you been ready to cook and found you were out of a certain ingredient? Sometimes it is inconvenient to run out and purchase the necessary ingredient -- it's easier to use a similar product as a replacement. There are, however, several factors to consider when substituting ingredients. Take into account differences in flavor, moisture, texture and weight.

Substitutions with an acid factor, such as molasses, need to be neutralized to avoid changes in the flavor and texture of the product. Differences in sweetening and thickening power need consideration in sugar and flour substitutions. To help avoid disappointments when substituting ingredients, understand the physical and chemical properties of all ingredients. Measure accurately.

The following table gives substitutes that may be used to get a finished product similar to the original.

The following abbreviations are used:

tsp = teaspoon
Tbsp = tablespoon
oz = ounce
lb = pound

Ingredient equivalents.		
Ingredient	**Amount**	**Substitutions**
Allspice	1 tsp	– 1/2 tsp cinnamon plus 1/2 tsp ground cloves.
Apple pie spice	1 tsp	– 1/2 tsp cinnamon, 1/4 tsp nutmeg, and 1/8 tsp cardamom.
Arrowroot, as thickener	1 Tbsp	– 2 Tbsp all-purpose flour. – 1 Tbsp cornstarch.
Baking powder, double acting	1 tsp	– 1/4 tsp baking soda, 1/2 tsp cream of tartar and 1/4 tsp cornstarch; – 1/4 tsp baking soda plus 5/8 tsp cream of tartar; – 1/4 tsp baking soda plus 1/2 cup buttermilk, sour milk or yogurt (decrease liquid in recipe by 1/2 cup); – 1/4 tsp baking soda, 1/2 Tbsp vinegar or lemon juice plus sweet milk to make 1/2 cup (decrease liquid in recipe by 1/2 cup); – 1/4 tsp baking soda plus 1/4 cup molasses (decrease liquid in recipe by 1-2 Tbsp); – 1 1/2 tsp phosphate or tartrate baking powder.
Bay leaf, crushed	1 tsp	– 1 whole bay leaf.
Brandy	1/4 cup	– 1 tsp brandy extract plus enough water or liquid called for in recipe to make 1/4 cup.
Bread crumbs dry	1/4-1/3 cup	– 1 slice bread; – 1/4 cup cracker crumbs; – 2/3 cup rolled oats;
Broth, beef or chicken	1 cup	– 1 bouillon cube, 1 tsp (1 envelope) powdered broth base or 1 tsp instant granules dissolved in 1 cup water.
Butter	1 cup	– 1 cup margarine; – 7/8 to 1 cup hydrogenated shortening plus 1/2 tsp salt; – 7/8 cup lard plus 1/2 tsp salt; – 7/8 cup oil plus 1/2 tsp salt.
Catsup	1 cup	– 1 cup tomato sauce plus 1/2 cup sugar and 2 Tbsp vinegar (for use in cooking).
Chili Sauce	1 cup	– 1 cup tomato sauce, 1/4 cup brown sugar, 2 Tbsp vinegar, 1/4 tsp cinnamon, and dash of ground cloves and allspice.
Chives, finely chopped	1 Tbsp	– 1 Tbsp green onion tops, finely chopped.
Chocolate, unsweetened	1 oz	– 3 Tbsp cocoa plus 1 Tbsp butter or fat; – 3 Tbsp carob powder plus 2 Tbsp water.
semisweet	1-2/3 oz	– 1 oz unsweetened chocolate plus 4 tsp sugar.

Chocolate chips, semisweet, melted	6 oz pkg (2/3 cup)	– 2 squares (2 oz) unsweetened chocolate, 2 Tbsp shortening and 1/2 cup sugar melted (2/3 cup).
Coconut, grated, dry	1 Tbsp	– 1 1/2 tbsp fresh coconut, grated.
Coconut milk	1 cup	– 1 cup milk.
Coconut cream	1 cup	– 1 cup cream.
Cornstarch	1 Tbsp	– 2 Tbsp all-purpose flour; – 2 Tbsp granular tapioca; – 1 Tbsp arrowroot.
Corn syrup	1 cup	– 1 cup granulated sugar plus 1/4 cup water or other liquid called for in recipe; – 1 cup honey.
Cracker crumbs	3/4 cup	– 1 cup dry bread crumbs.
Cream: • half & half (10-12% fat)	1 cup	– 1 1/2 Tbsp butter plus 7/8 cup milk; – 1/2 cup coffee cream plus 1/2 cup milk; – 1 cup evaporated milk, undiluted.
• coffee (20% fat)	1 cup	– 3 Tbsp butter plus 7/8 cup milk.
• heavy (36-40% fat)	1 cup	– 1/3 cup butter plus 3/4 cup milk (for baking only, will not whip).
• sour	1 cup	– 7/8 cup buttermilk or sour milk; – 1 cup yogurt; – 1 1/8 cup powdered nonfat dry milk, 1/2 cup warm water and 1 Tbsp vinegar (mixture will thicken in refrigerator in a few hours); – 1 cup evaporated milk plus 1 Tbsp vinegar (allow to stand 5 minutes before using); – 1/3 cup buttermilk, 1 Tbsp lemon juice, and 1 cup smooth cottage cheese blended together; – 7/8 cup milk, 1 Tbsp lemon juice, and 2 Tbsp butter or margarine.
• whipped cream	2 cups	– 1 cup chilled evaporated milk plus 1/2 tsp lemon juice, whipped until stiff.
Cream of tartar	1/2 tsp	– 1 1/2 tsp lemon juice or vinegar.
Dill, fresh	1 head	– 1 tsp dill seed.
Eggs • whole, large	1 egg (3 1/3 Tbsp)	– 2 1/2 Tbsp dried, sifted eggs plus 2 1/2 Tbsp water; – 3 1/3 Tbsp frozen egg yolks, thawed; – 1/2 tsp baking powder, 1 Tbsp vinegar and 1 Tbsp liquid (in baking); – 1 egg in every 3 can be replaced with 1 Tbsp cornstarch in baking; – Soften 1 Tbsp unflavored gelatin in 3 Tbsp cold water, add 3 tsp boiling water, cool and beat until frothy, add to recipe (reduce other liquid by 2 Tbsp);

		– 1/4 cup commercial egg substitute.
• whites	1 egg white (2 Tbsp)	– 2 tsp dried egg white plus 2 Tbsp water; – 2 Tbsp frozen egg whites, thawed.
• yolks	1 egg yolk (1 1/3 Tbsp)	– 2 Tbsp dried egg yolks plus 2 tsp water; – 4 tsp frozen egg yolks, thawed.
Flour, • pastry	1 cup	– 7/8 cup all-purpose or bread flour.
• cake	1 cup	– 7/8 cup all-purpose flour (1 cup less 2 Tbsp).
• white, all-purpose for thickening	1 Tbsp	– 1/2 Tbsp cornstarch, potato starch, rice starch or arrowroot; – 1 Tbsp quick-cooking tapioca; – 1 Tbsp waxy rice or corn flour; – 2 Tbsp granular cereal; – 2 Tbsp browned flour; – 1 1/2 Tbsp whole wheat flour.
• white, all-purpose for baking Note: Specialty flours added to yeast bread recipes will result in a reduced volume and heavier product.	1 cup	– 1 1/2 cups bread crumbs; – 1 1/8 cups cake flour (1 cup plus 2 Tbsp); – 7/8 to 1 cup corn meal; – 1/2 cup cornstarch plus 1/2 cup rye, potato or rice flour (sift together 6 times, use with 2 tsp baking powder per cup in quick breads as wheat flour allergy substitute); – 13/16 cup gluten flour (1 cup less 3 Tbsp); – 5/8 cup potato flour; – 7/8 cup rice flour; – 1 1/3 cups rolled oats; – 1 1/4 cups rye flour; – 1/8 cup soy, cottonseed, peanut or carob flour plus 7/8 cup all-purpose flour; – 1/3 cup wheat germ plus 2/3 cup all-purpose flour – 1 cup minus 1 Tbsp whole wheat flour.
• white, all-purpose, self-rising	1 cup	– 1 cup all-purpose flour plus 1 1/4 tsp baking powder and 1/4 tsp salt.
Garlic	1 clove, small	– 1/8 tsp garlic powder or instant minced garlic; – 1/2-1 tsp garlic salt (reduce amount salt called for in recipe).
Gelatin, flavored	3-oz package	– 1 Tbsp plain gelatin plus 2 cups fruit juice.
Ginger, candied or raw	1 Tbsp	– 1/8 tsp powdered ginger.
Herbs, fresh	1 Tbsp	– 1 tsp dried herbs.
Honey	1 cup	– 1 1/4 cup sugar plus 1/4 cup liquid (use liquid called for in recipe).
Horseradish, grated	1 Tbsp	– 2 Tbsp bottled horseradish.

fresh		
Italian seasoning	1 tsp	– 1/4 tsp basil, 2/3 tsp dried parsley, and pinch oregano.
Lemon • whole	1 lemon	– 1 to 3 Tbsp juice, plus 2 to 2 1/2 tsp grated rind.
• juice	1 tsp	– 1/2 tsp vinegar.
• grated rind or peel	1 tsp	– 1/2 tsp lemon extract.
Lemon grass	1 Tbsp	– 1 Tbsp lemon peel.
Maple sugar, grated	1 Tbsp 1/2 cup	– 1 Tbsp white sugar; – 1 cup maple syrup (decrease liquid by 1/2 cup).
Maple syrup	about 2 cups	– Combine 2 cups sugar and 1 cup water, bring to clear boil; take off heat; add 1/2 tsp maple flavoring.
Marshmallows, miniature	1 cup	– 10 large marshmallows.
Mayonnaise (for use in salads and salad dressings)	1 cup	– 1 cup yogurt, sour cream or cottage cheese pureed in blender (use for all or part of mayonnaise called for in recipe).
Milk • buttermilk or sour	1 cup	– 1 cup minus 1 Tbsp sweet milk, plus 1 Tbsp vinegar or lemon juice; let stand 5 minutes; – 1 cup sweet milk plus 1 1/4-1 3/4 tsp cream of tartar; – 1 cup yogurt (plain).
• skim	1 cup	– 1/3 cup instant nonfat dry milk plus 7/8 cup water.
• whole	1 cup	– 1/2 cup evaporated milk plus 1/2 cup water; – 1 cup skim, 2% or reconstituted dry milk; – 1 cup soy or almond milk; – 1 cup fruit juice or potato water in baking; – 1 cup water plus 1 1/2 tsp butter in baking; – 1 cup buttermilk plus 1/2 tsp baking soda (decrease baking powder by 2 tsp).
• sweetened condensed	1 cup	– Combine 1 cup plus 2 Tbsp dry milk with 1/2 cup warm water and 3/4 cup sugar, mix well, may set pan in bowl of hot water to dissolve sugar.
Mint leaves, fresh chopped	1/4 cup	– 1 Tbsp dried mint leaves.
Molasses	1 cup	– 3/4 cup sugar, increase liquid by 5 Tbsp, decrease baking soda by 1/2 tsp, add 2 tsp baking powder; – 3/4 cup sugar plus 1 1/4 tsp cream of tartar, increase liquid in recipe by 5 Tbsp.
Mushrooms, fresh	1 lb	– 3 oz dried plus 1 1/2 cups water;

		– 1 8-oz can, drained weight.
Mustard, dry	1 tsp	– 1 Tbsp prepared mustard; – 1/2 tsp mustard seeds.
Nuts	1 cup	– 1 cup rolled oats, browned (in baked products).
Oil (for sauteing)	1/4 cup	– 1/4 cup melted margarine, butter, bacon drippings, shortening or lard.
Onion	1 small	– 1/4 cup chopped, fresh onion; – 1 1/3 tsp onion salt; – 1 to 2 Tbsp instant minced onion; – 1 tsp onion powder.
Onion powder	1 tsp	– 1/4 cup fresh onion, chopped.
Orange	1 medium	– 6 to 8 Tbsp juice; 3/4 cup diced; 2 to 3 Tbsp grated rind.
Orange peel, dried	1 Tbsp	– 2 or 3 Tbsp grated fresh orange peel (peel of medium orange).
Parsley, fresh	1 Tbsp	– 1 tsp parsley flakes.
Pepper, white	1 tsp	– 1 tsp black pepper.
Peppers, green or red bell, dried	1 Tbsp	– 3 Tbsp fresh bell pepper, dried chopped.
Pimento	2 Tbsp, chopped	– 3 Tbsp fresh red bell pepper; – 1 Tbsp dried red pepper, rehydrated.
Pumpkin pie spice	1 tsp	– 1/2 tsp cinnamon, 1/4 tsp ginger, 1/8 tsp allspice and 1/8 tsp nutmeg.
Rennet	1 tablet	– 1 Tbsp liquid rennet.
Rice	1 cup cooked	– 1 cup converted, regular brown or wild rice, cooked. – 1 cup bulgur or pearl barley, cooked.
Rum	1/4 cup	– 1 Tbsp rum extract plus enough liquid to make 1/4 cup.
Shortening, melted	1 cup	– 1 cup cooking oil.
solid	1 cup	– 1 cup minus 2 Tbsp lard; – 1 cup butter or margarine (decrease salt in recipe by 1/2 tsp).
Sugar • brown	1 cup	– 1 cup granulated sugar; – 1 cup granulated sugar plus 1/4 cup unsulphured molasses; – 1/2 cup liquid brown sugar.
• confectioners or powdered	1 cup	– 3/4 cup granulated sugar (for uses other than baking).
• granulated	1 cup	– 1 cup firmly packed brown sugar; – 1 1/3 cup confectioners sugar (for uses other than baking);

		– 1 cup corn syrup, reduce other liquid by 1/4 cup (never replace more than 1/2 of sugar called for in recipe with corn syrup); – 13/16 cup honey (1 cup less 3 Tbsp); reduce liquid in recipe by 3 Tbsp for every cup of honey added; add a pinch of baking soda to neutralize acidity; – 3/4 to 1 cup maple syrup minus 3 Tbsp other liquid; – 1 cup molasses or sorghum plus 1/2 tsp baking soda; omit or decrease baking powder by 1 tsp; reduce other liquid by 6 Tbsp; – 1 cup raw sugar.
• noncaloric solution	1/8 tsp 2 Tbsp	– 1 tsp granulated sugar; – 1 cup granulated sugar.
• noncaloric grains	1/4 tsp 1/4 cup	– 1 tsp granulated sugar; – 1 cup granulated sugar.
Tapioca, quick-cooking	1 1/2-2 Tbsp	– 4 Tbsp pearl tapioca, soaked.
quick-cooking for thickening	1 Tbsp	– 1 Tbsp flour.
Tomatoes, fresh	2 cups, chopped	– 1 16-oz can, drained.
• packed	1 cup	– 1/2 cup tomato sauce plus 1/2 cup water.
• canned	1 cup	– 1 1/3 cups diced tomatoes simmered 10 minutes.
Tomato juice	1 cup	– 1/2 cup tomato sauce plus 1/2 cup water.

How Much Have You Learned?

Self-Check 1.2

Write the substitution for the following ingredients. Write your answer on a separate sheet of paper.

1. 1/4-1/3 cup Dry bread crumbs
2. 1C Coconut milk
3. ½ tsp cream of tartar
4. 1C Cake flour
5. 1 cup Miniature marshmallow
6. 1cup Skim milk
7. 1 cup Nuts
8. ¼ cup Oil
9. 1 cup Brown sugar
10. 1 cup Confectioners/powdered sugar

LEARNING OUTCOME 2

Calculate cost of production

PERFORMANCE STANDARDS

1. Costs of production are computed according to standard procedure
2. Computed costs of production are reviewed and validated according to enterprise production requirements.

Materials

- Purchasing cost of the item
- Selling cost of the item
- Calculator

What Do You Already Know?

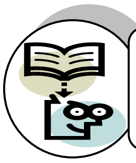
Let us determine how much you already know about the use farm tools and equipment. Take this test.

Pretest LO 2

Complete the following table.

Items	Purchase cost/buying price	Selling price	Peso markup	Percentage mark up
Bibingka	5.00	7.00	___________	___________
Cup cake	7.00	10.00	___________	___________
Pulvoron	3.00	4.00	___________	___________
Chicharon	25.00	35.00	___________	___________

Yellow corn	10.00	15.00	__________	__________



What Do You Need To Know?

Read the Information Sheet 2.1 very well then find out how much you can remember and how much you learned by doing Self-check 2.1.

Information Sheet 2.1

How to Calculate Markup Percentage

Markup is the difference between how much an item costs you, and how much you sell that item for--it's your profit per item. Any person working in business or retail will find the skill of being able to calculate markup percentage very valuable.

Instructions

1. Calculate your peso markup. This is done by subtracting your buying price from your selling price.

   Example

Selling price		*15.00*
Purchase cost/buying price	-	*10.00*
Peso markup		*5.00*

2. Decide whether you want to calculate your percentage markup based on cost or selling price. Once you choose which you will be using to calculate, it is important you stick to the method you choose throughout all your calculations, or you will end up with faulty data. If you decide to calculate your percent markup based on cost, go on to Step 3. If you decide to calculate your percent markup based on selling price, go on to Step 4.

3. Calculate percent markup based on cost. This is done by dividing the peso markup by the cost.

   Example

Peso markup	*5.00*
Purchase cost/buying price	*÷10.00*

Percentage mark up	*.5 or 50%*

4. Calculate your percent markup based on selling price. This is done by dividing the peso markup by the selling price.

   Example

Peso markup	*5.00*
Selling price	*÷15.00*
Percentage mark up	*.33 or 33%*

5. Make sure you consistently use either cost of the product or selling price to find the percent markup on an item. Even though the cost, selling price, and peso markup will always be the same, the percentage markup will be drastically different depending on if you calculate it using selling price or cost. Using selling price will give you a lower percentage markup (assuming you are making a profit), while using cost will give you a higher percentage markup.

How Much Have You Learned?

Self-Check 2.1

Given the following recipe and its estimated cost, compute for the total purchase cost and impose a 50% mark up to determine the selling price of your product. Yield=**24 servings**

Item	**Unit coct**	**Total Cost**	**Peso mark-up**	**Selling Price per serving**
2 K chicken	115.00/kilo	_____		
1 head of garlic	50.00/kilo 20pcs/kilo	_____		
4 Tbsp soy sauce	15.00/bottle Approx. 32T	_____		
1 tsp ground black pepper	1.00/ small pack ½ t/pack	_____		
1/2 cup vinegar	12.00/bottle Approx. 2 C/bottle	_____		
2 Tbsp cooking oil	40.00/bottle Approx. 32T	_____		
TOTAL		_____	_____	_____

Selling price = $\frac{\text{Total cost + Peso mark-up}}{\text{No. of yield}}$

SP= ______

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LESSON 3

Interpret Kitchen Lay-out

LEARNING OUTCOMES:

At the end of this lesson, you are expected to do the following:

LO 1. Read and interpret kitchen plan
LO 2. Create kitchen lay-out

Definition of Terms

Work Centers – focused around major appliances – refrigerator-freezer, range, or sink. These centers make possible an orderly flow of activities connected with food storage, preparation, cooking serving, and clean-up.

Work Flow – where work is done most efficiently when it flows in a natural progression, either from left to right or right to left.

Work Simplification – means doing the job in the easiest, simplest and quickest way.

Work Station – simply means a specific work area where a particular kind of food is produced or a specific job is done.

Work Triangle – an imaginary line drawn from each of the three primary work stations in the kitchen, and avoid traffic flow problems.

LEARNING OUTCOME 1

Read and interpret kitchen plan

PERFORMANCE STANDARDS

- Sign, symbols, and data are identified according to job specifications.
- Sign, symbols and data are determined according to classification or as appropriate in drawing.

Materials

- Actual kitchen lay out
- Pencil
- Bondpaper

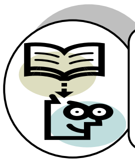
What Do You Already Know?

Let us determine how much you already know about reading and interpreting kitchen plans. Take this test.

Pretest LO 1

Direction: Draw symbol of the following:

1. Refrigerator
2. Free standing stove/oven
3. Sinks
4. Microwave
5. Dishwasher

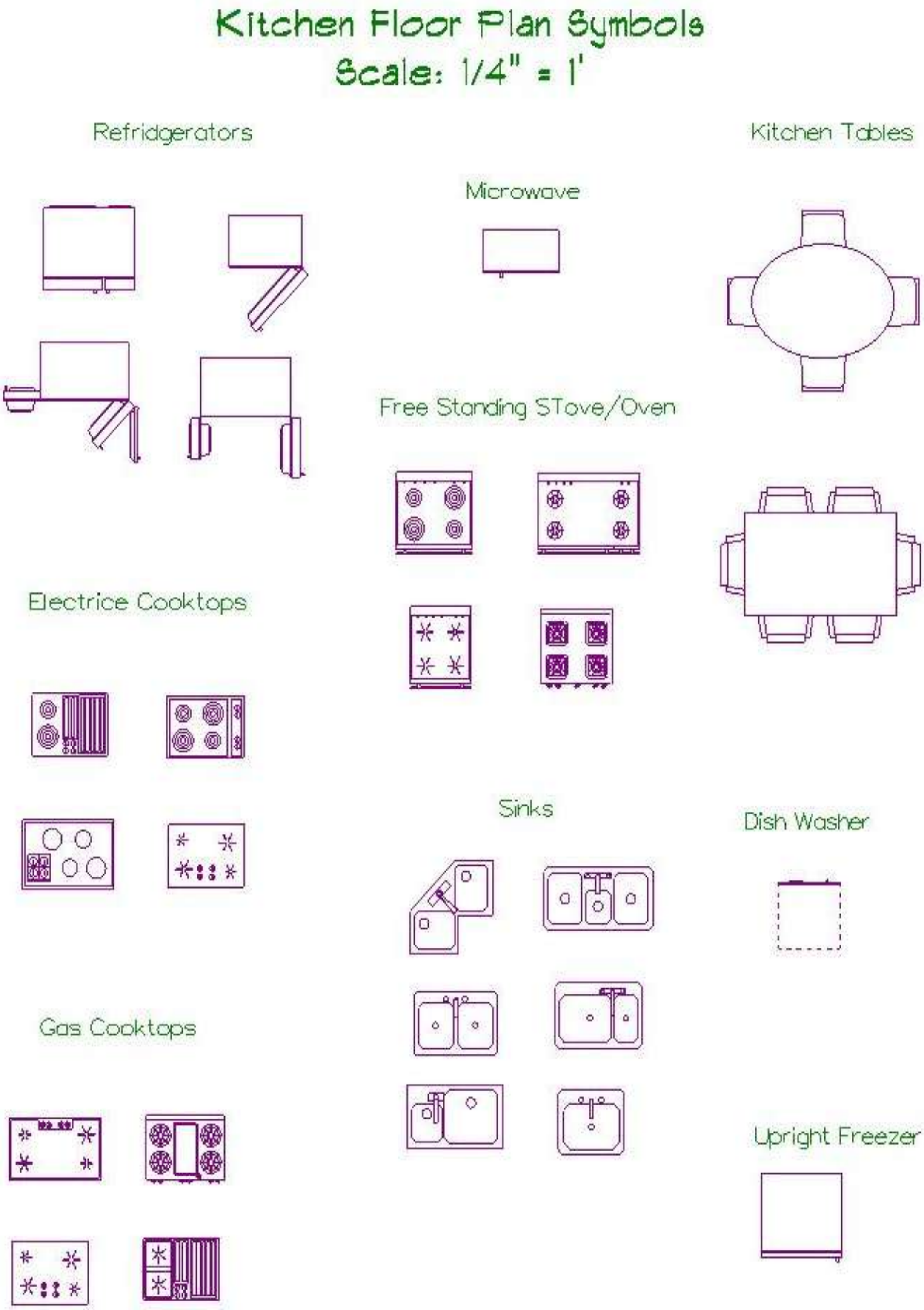


What Do You Need To Know?

Read Information Sheet 1.1 very well then find out how much you can remember and how much you learned by doing Self-check 1.1.

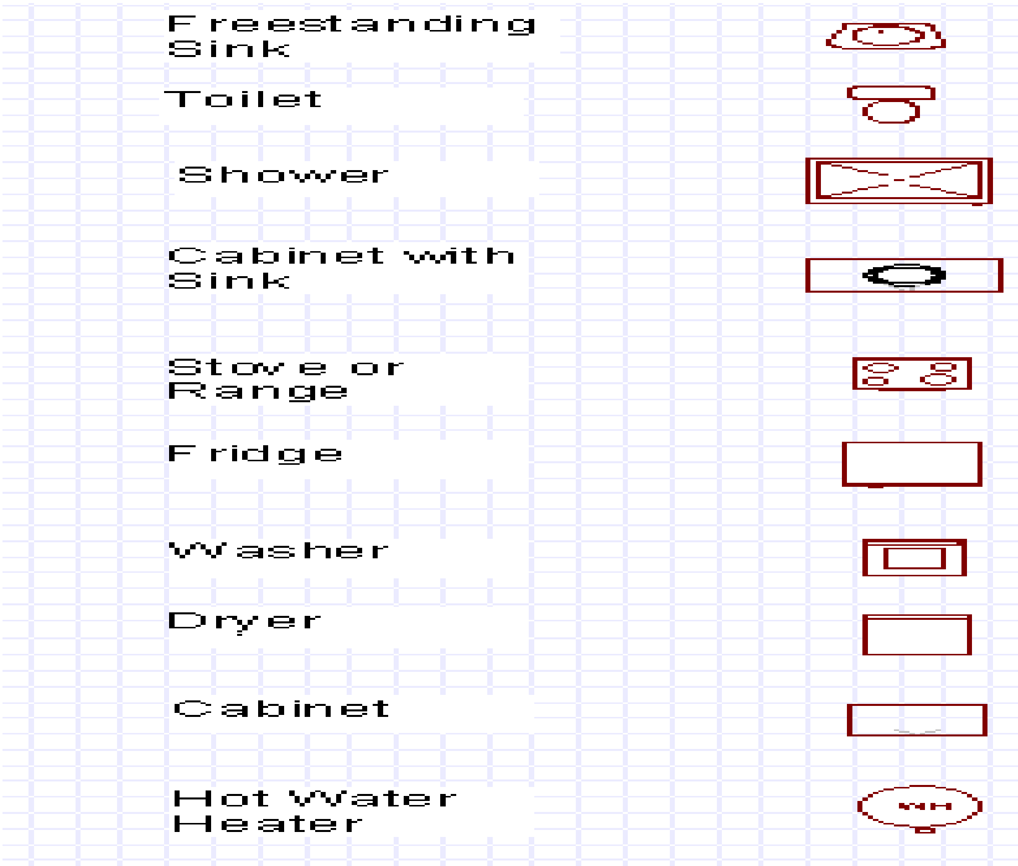
Information Sheet 1.1

Kitchen floor plans and symbols


Kitchen Floor Plan Symbols
Scale: 1/4" = 1'
Refridgerators
Microwave
Kitchen Tables
Free Standing STove/Oven
Electrice Cooktops
Sinks
Dish Washer
Gas Cooktops
Upright Freezer

http://content.cteonline.org/resources/documents/35/35a2a92d/35a2a92d5da7e3be8ada54c723bf67448495382e/KitchenFloorPlanSymbolsAppliances.pdf

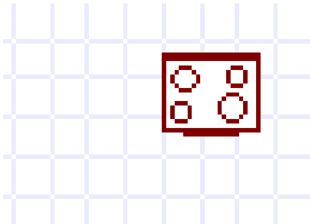
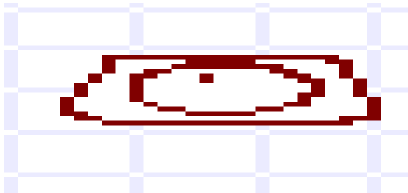
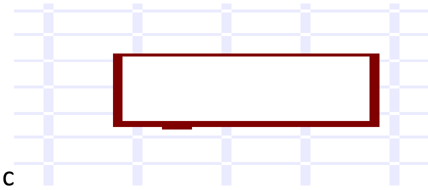
Kitchen Floor Plans and Symbols

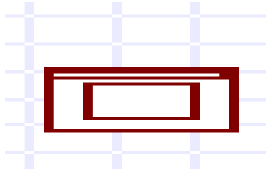


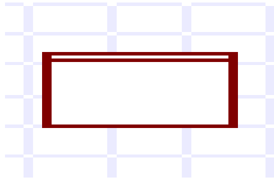
How Much Have You Learned?

Self-Check 1.1

Direction: Match column A with column B. Write the letter of the correct answer.

COLUMN A	COLUMN B
1. Free standing sink	a.. 
2. Washer	b. 
3. Dryer	c 

4. Stove or range d . 

5. Fridge e. 

Refer to the Answer Key. What is your score?

How Do You Apply What You Have Learned?

Show that you learned something by doing this activity

Activity Sheet 1.1

After having discussed the different kitchen floor plans and symbols , you are now ready to lay-out your own dream kitchen. Complete your sketch by placing the necessary symbols to show the different appliance, counters, areas and the direction of work flow. Use a seperate sheet.

How Well Did You Perform?

Find out   by accomplishing the Scoring Rubric honestly and sincerely.
Remember it is your learning at stake!

ACCURACY (100%)	SCORING CRITERIA
Demonstrated and interpreted 5 kitchen floor plans and symbols	
Demonstrated and interpreted 4 kitchen floor plans and symbols	
Demonstrated and interpreted 3 kitchen floor plans and symbols	
Demonstrated and interpreted 2 kitchen floor plans and symbols	
Demonstrated and interpreted 1 kitchen plan and symbols	
Failed to demonstrate and interpret kitchen floor plans and symbols	

LEARNING OUTCOME 2

Create kitchen lay-out

PERFORMANCE STANDARDS

- Types of kitchens and appropriate layouts are identified.
- Familiarization with signs, lines and symbols of kitchen layouts.
- Sign, lines and symbols are used appropriately.

Materials

- Actual kitchen lay out
- Pencil
- Bondpapers

What Do You Already Know?

Let us determine how much you already know about creating kitchen lay-out. Take this test.

Pretest LO 2

Direction: Fil inl the blanks with word or group of words that will make the statement complete.

1. Doing the job in the easiest, simplest and quickest way refer to ___________.
2. Work Station simply means a __________ __________ __________where a particular kind of food is produced .
3. The term that means doing the job in the easiest, simplest and quickest way is ____________.
4. Type of kitchen which is most suitable for large families is ___________.
5. Type of kitchen which is the most popular and compact is ____________.

What Do You Need To Know?

Read Information Sheet 2.1 very well then find out how much you can remember and how much you learned by doing Self-check 2.1.

Information Sheet 2.1

UNDERSTANDING THE BASIC KITCHEN LAYOUT

Understanding the basic principles of kitchen layout will help take much of the mystery out of the design process. One of the most basic layout principles is the *work triangle*. The *work triangle* is an imaginary line drawn from each of the three primary work stations in the kitchen - *the food storage, preparation/cooking, and clean-up stations*. By drawing these lines, you can assess the distance required to move to and from each area and thus determine how well the traffic will flow. To help avoid traffic flow problems, work triangles should have a perimeter that measures less than 26 feet.

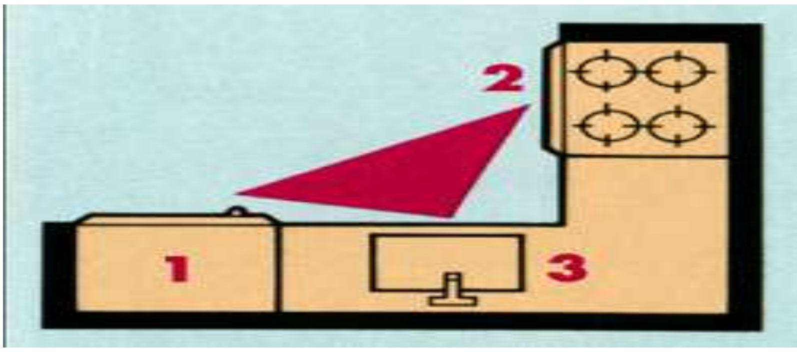
The three primary kitchen work stations which create the *work triangle* are:

1. *The food storage station* - Your refrigerator and pantry are the major items here. Cabinetry like lazy susan or swing-out pantry units adds function and convenience. Options like wine racks, spice racks, and roll-out trays help to organize your groceries.

2. *The preparation/cooking station* - Your range, oven, microwave, and smaller appliances are found in this area. Counter space is important in this section. Conserve space by moving appliances off the counter with appliance garage cabinets and space-saving ideas like towel rods and pot lid racks.

3. *The clean-up station* - Everyone's least favorite activity is one of the kitchen's most important - clean-up. This area is home to the sink, waste disposal, and dishwasher. Cabinetry for this station is designed to organize with the trash bin cabinet and roll-out tray baskets for storage convenience.

<u>Work Station</u>



DETERMINING YOUR KITCHEN'S LAYOUT

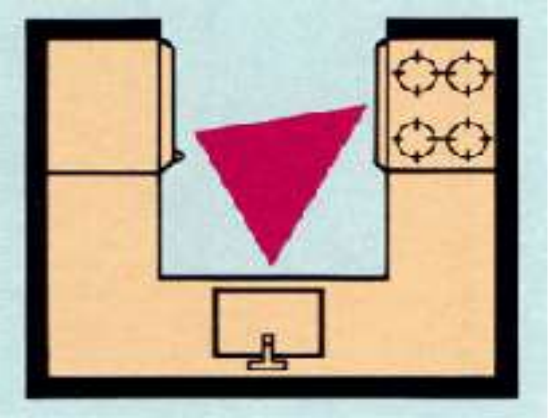
Since the kitchen is one of the most active work areas of the home, it is important to select the right layout to complement your lifestyle and taste.

There are five primary kitchen layout shapes - *the U-Shaped, L-Shaped, Island, G-Shaped, Corridor/Gallery, and Single Wall shapes*.

After learning about the *work triangle* in the section "Understanding Basic Kitchen Layout," you will now see how the *work triangle* functions in each layout and the advantages each layout offers.

1. **The U-Shaped Kitchen** - Named for the "U" shape it resembles, this kitchen is popular in large and small homes alike.

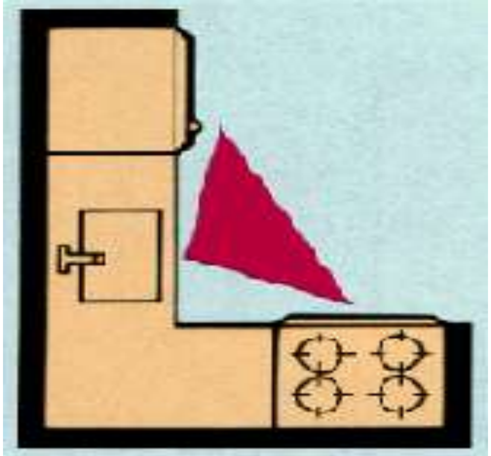
    - Perfect for families who use their kitchens a great deal
    - Provides plenty of counter space
    - Efficient work triangle
    - Can convert one cabinet leg into a breakfast bar



2. **The L-Shaped Kitchen** - This kitchen shape is one of the most flexible and most popular, providing a compact triangle.

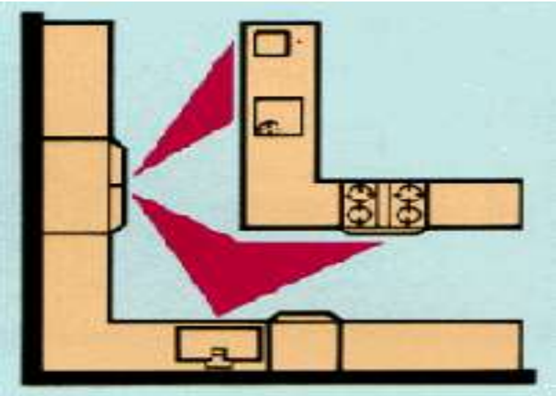
    - Very flexible layout design
    - Major appliances can be placed in a variety of areas
    - Work areas are close to each other
    - Can easily convert to a U-Shape with a cabinet leg addition

L- Shape:



3. ***The Island Option.*** Islands are extremely popular in homes today and are most often seen in L-Shaped kitchens. Islands can not only keep work areas traffic-free, but also create a wealth of extra counter and storage space. An island can be an indispensable food preparation station or act as a butcher block area. The island is also an ideal place to add an extra sink or an island grill.

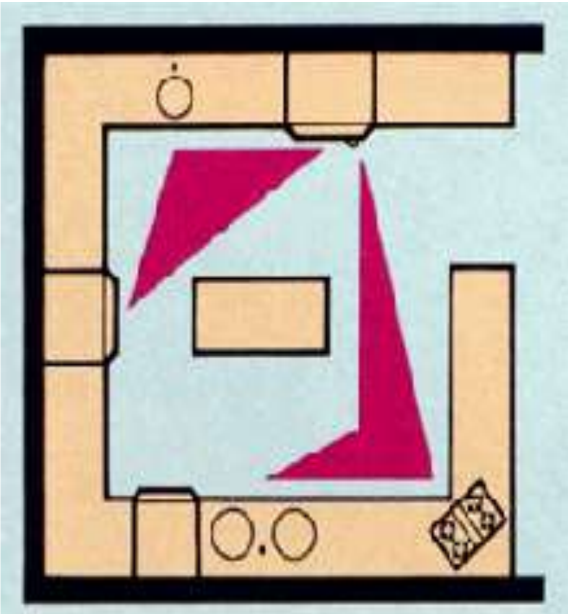
Island:



4. **The G-Shaped Kitchen** - Built very much like the U-Shaped with the addition of an elongated partial wall, the G-Shaped kitchen offers a great deal of space.

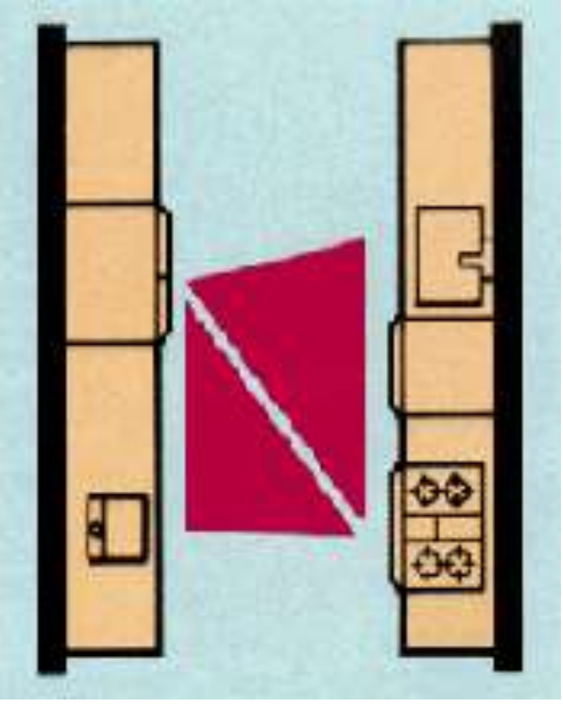
- Ideal for larger families needing extra storage space
- Plenty of counter and cabinet space
- Multiple cooks can function well in this layout
- Can convert one cabinet leg into a breakfast bar or entertaining area

G-shaped:



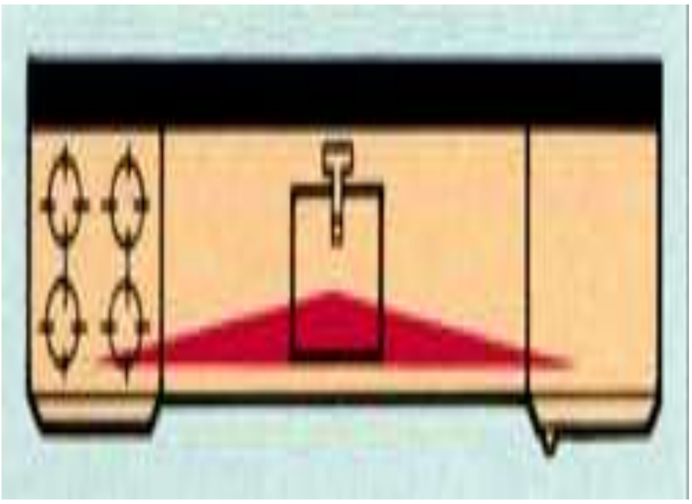
5. **The Corridor/Galley Kitchen** - This style kitchen makes the most out of a smaller space.
    - Great for smaller kitchens
    - Appliances are close to one another
    - Easy for one cook to maneuver
    - Can easily convert to a U-Shape by closing off one end

Corridor/Galley:



6. **The Single Wall/Pullman Kitchen** - Designed for homes or apartments, the single wall kitchen offers a very open and airy feel.
    - Ideal for apartments and smaller homes
    - Works well with the open designs found in many contemporary homes
    - Small moveable table can provide eating space
    - Can be enhanced with the addition of an island

Single Wall/Pullman:



How Much Have You Learned?

Self-Check 2.1

Direction: Fill the blanks with word or group of words that will the statement complete.

1. Work Station simply means a ___________ ___________ ___________where a particular kind of food is produced .
2. Type of kitchen which is most suitable for large families is ____________.
3. Doing the job in the easiest, simplest and quickest way refer to ____________.
4. The term that means doing the job in the easiest, simplest and quickest way is _____________.
5. Type of kitchen which is the most popular and compact is _____________.

Refer to the Answer Key. What is your score?

How Do You Apply What You Have Learned?

Show that you learned something by doing this activity

Activity Sheet 2.1

Group

Collect pictures of different types of kitchen. Label each type properly on a 2 x 3 inch illustration board.

How Well Did You Perform?

Find out by accomplishing the Scoring Rubric honestly and sincerely. Remember it is your learning at stake!

ACCURACY (100%)	SCORING CRITERIA
Demonstrated 5 types of kitchren lay-out	
Demonstrated 4 types of kitchen lay-out	
Demonstrated 3 types of kitchen lay-out	
Demonstrated 2 types of kitchen lay-out	
Demonstrated 1 type of kitchen lay-out	
Failed to demonstrate any type of kitchen lay-out	

Congratulations! You did a great job! Rest and relax a while then move on to the next lesson. Good luck!

REFERENCES

LO1http://content.cteonline.org/resources/documents/35/35a2a92d/35a2a92d5da7e3be8ada54c723bf67448495382e/KitchenFloorPlanSymbolsAppliances.pdf

- Author, copyright year, title, place of publication: publishing house

LO 2

- http://library.thinkquest.org/TQ0312380/machine.htm
- http://www.agmachine.com/xmmd43d.htm
- http://library.thinkquest.org/TQ0312380/machine.htm
- http://www.agmachine.com/xmmd43d.htm

LESSON 4

Practice Occupational Health and Safety

LEARNING OUTCOMES

At the end of the lesson, you are expected to do the following:

LO1 Identify hazards and risks
LO2 Control hazards and risks in the workplace

Definition of Terms

Bacteria – a simple, single celled microorganism. They food , moisture and warmth to thrive.

Electroshock - caused by touching exposed electrical wire or a piece of electrical equipment which is not grounded properly.

Force Majure- a calamity caused by nature e.g. storm, flood, earthquake

Grounded – means that the electrical conductor is connected to the ground, which becomes part of the electrical circuit

Hazard – a situation that could be dangerous to people in the workplace

Microorganisms –are living cells so small that they they can only be seen in a microscope. They are commonly found to contaminate food – bacteria, molds, and yeast.

Molds – also a microorganism, that has "furry" growth often found on spoiled food.

Sanitation – the science and practice of maintaining clean and healthy conditions of food production so that the food served to customers cannot make him ill.

Toxin – a poisonous substance that makes you sick

LEARNING OUTCOME 1

Identify hazards and risks

PERFORMANCE STANDARDS

- Safety regulations and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures.
- Hazards/risks in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures.
- Contingency measures during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures.

Materials

- Mask
- Gloves
- Goggles
- Hair Net/cap/bonnet
- Face mask/shield
- Ear muffs
- Apron/Gown/coverall/jump suit
- Anti-static suits

What Do You Already Know?

Let us determine how much you already know about practicing occupational safety and health. Take this test.

Pretest LO 1

Directions: Identify the type of hazard/accident in the workplace. Write your answers ona separate sheet. Write letters only

A. • Protecting your property from fire;

B. • Protecting your property from natural hazards;

C. • Protecting your property from crime;

D. • Protecting your staff and visitors from accidents;

E. • Legislation that may affect your business.

1. Cooking ranges, boilers and deep-fat fryers without fitted thermostats or emergency cutoff valves to turn off
2. Non-visual inspections of all portable electrical items and electrical wiring.
3. Prepare a flood plan for your business.
4. Consider putting shop-fronts with grilles or shutters to deter smash and grab raiders.
5. Keeping the premises clean, tidy, congestion-free and well lit will go a long way to preventing most of this type of accident.
6. Do make aisles and passageways sufficiently wide for easy movement and keep clear at all times.
7. Clear up spillage promptly and post warning notices.
8. Manufacturing and packaging standards should pass the regulatory board.
9. Only licensed electrical engineers should checked and inspect electrical installations and wirings.
10. A food establishment should be in a free-flood area.

What Do You Need To Know?

Read Information Sheet 1.1 very well then find out how much you can remember and how much you learned by doing Self-check 1.1.

Information Sheet 1.1


Commonly Encountered Maintenance Problems in Commercial Kitchens

The commercial kitchens are the production units of any organizations whether it is a Hotel, Restaurant, Banquet or any other business outlet like Fast Food, or road side eateries. These kitchens consist of mostly white powder coated metallic false ceilings stainless steel kitchen equipments and kota stone flooring. In some kitchen, we may find aluminium sheet false ceiling. The light fittings are recessed in false ceiling and have Perspex cover over the fluorescent tubes to avoid any glass breakage falling in food items. The kitchen equipment are operated with electricity, LPG, Coal and water.

Electrical Hazards
Potential Hazard
Workers in restaurants are exposed to shocks and electrical hazards from: ▪ Worn electric cords or improperly used or damaged extension cords ▪ Improperly wired or ungrounded outlets ▪ Faulty equipment and wiring ▪ Damaged receptacles and connectors ▪ Wet clean-up processes ▪ Unsafe work practices

The electrical operated kitchen equipment are Hotcase, Bain Marie Service Counter, Refrigerators, coffee Machine, Tea-Coffee Dispensers, Deep Freezers and Masala Grinders etc.
The equipment like cooking ranges, Chinese Cooking Range, Griddle Plate, Oven and Bakery Oven are operated on LPG. The tandoors in kitchen are operated with coal. The dishwash sink, counter sink and bain marie etc. needs cold water and hot water for their use. We face many problems in these commercial kitchens on a day to day use and these are listed below:-

(a) Electrically operated kitchen equipment:

· Tripping of miniature circuit breakers because of wrong selection in terms of capacity, short circuiting etc.

· Overloading of circuit by using high rated kitchen equipment in less rated M.C.B.

· Failure of insulation of P.V.C. wires dues to over heating of circuit or continuous use of Electrical Equipment.

· Short circuiting of air heaters being used in Hot cases and service counters for continuously long hours usage.

· Burning of Immersion heaters of Bain marie when sufficient water quality is not available in the Bain Marie.

· Short-circuiting of electrical wiring by putting water on electrical switches while cleaning the kitchen during night hours by unskilled worker.

· Damaging the immersion heaters o tea/coffee boilers and milk boilers by not monitoring the quantity of water in tea boiler and that of milk in milk boiler.

(B) LPG Operated Kitchen Equipment:

· The cooking ranges are operated on LPG and if LPG supply is not maintained properly, it may cause the problem of fire in kitchen.

· Smoke created by continuous use of LPG in commercial kitchen.

· The hoods over the ranges should have filters to control oil and Grease, otherwise the smoke carried along with oil and Grease shall cause problems of fire is exhaust chimney.

· The LPG operated equipment have burners which needs to be cleaned regularly to avoid mishap.

· The oil, grease used in cooking and production of food items to be handled properly otherwise spillage over LPG operated equipment can cause problem of fire.

(C) Water Operated Kitchen Equipment:

· Dish washing machines needs electricity and water both. As the water mixes with chemicals used for cleaning the plates, glasses, etc. the water and chemicals create mishaps and hazards. The electrical operated kitchen equipment are Hotcase, Bain Marie Service Counter, Refrigerators, coffee Machine, Tea-Coffee Dispensers, Deep Freezers and Masala Grinders etc.

The equipment like cooking ranges, Chinese Cooking Range, Griddle Plate, Oven and Bakery Oven are operated on LPG. The tandoors in kitchen are operated with coal. The dishwash sink, counter sink and bain marie etc. need cold water and hot water for their use. We face many problems in these commercial kitchen in a day to day use.

Information Sheet 1.2

Apply health, safety and security procedures in the workplace

Running a business in a cafeteria or a big food service establishment is a demanding job. Consider the following responsibilities if you are a worker or an owner of such business.

- Protecting your property from fire;
- Protecting your property from natural hazards;
- Protecting your property from crime;
- Protecting your staff and visitors from accidents;
- Legislation that may affect your business.

Most kitchen fires occur in kitchen ranges, boilers or deep-fat fryers and can often be traced back to poor cleaning regimes.

A. Protecting Property from Fire

- Ensure that cooking ranges, boilers and deep-fat fryers are fitted with thermostats or emergency cutoff valves to turn off the fuel supply should a fire break out.
- Ensure that filters are removed and de-greased frequently to prevent a build up of greasy deposits.

This should be done weekly but you may need to consider more frequent cleaning if the equipment isused for long periods on a daily basis.

• Store all combustible materials away from buildings or perimeter fencing – preferably inside locked waste bins or lidded skips. Ensure they are emptied regularly. If no suitable outside location is available, use a secure internal storage area.

• Be vigilant when you open and close the premises each day – look for signs of potential trouble e.g.graffiti or damage to fences – remove graffiti and repair any damage immediately to deter further damage occurring.

Electrical faults

Prevention of faults is the answer here and this can be achieved by:

• Frequent visual inspections of all portable electrical items and fixed electrical wiring.

• Regular maintenance of these items by an authorized agency or licensed electrician may be recodred and monitored.

Smoking

Ideally smoking should be prohibited throughout the premises (including yards and open areas) and notices to that effect prominently displayed.

• Ensure smoking is restricted to a designated area that is kept free of combustible items such as paper, curtains, flammable liquids.

• Provide metal lidded bins for the disposal of ashtray contents and ensure they are emptied safely every day. Do not dispose of them with other combustible waste.

B. Protecting establishment from natural hazards

Flood

Firstly, check with the Local Authority whether propertty is in a flood risk area. If it is then you should:

Prepare a flood plan for your business detailing the actions you will need to take to minimise damage and disruption. Practice putting the plan into action so that you and your staff will be sure it works and have experience of what to do.

Water Escape

Get dripping taps repaired as they can cause damages.

Ensure pipes are properly lagged using suitable insulation material.

If your premises are likely to be unoccupied for a longer period e.g. over Christmas and New Year, turn the water off at the stopcock and drain the system if possible.

Storm Damage

Making sure your premises are in a good state of repair, it will minimise the chance of storm damage - check the building regularly (walls, roof and any outbuildings) and ensure any problems you find are repaired promptly.

Check at least once a year that roof gutters, down-pipes and drainage gulleys are clear and unobstructed and kept free of leaves and vegetation.

C. Protecting property from crime

Burglary

Thieves frequently see catering businesses as an easy target and it is wise to ensure that you have a good level of security at your premises.
Locks on external doors should carry standards and high quality materials.
All accessible opening windows should be fitted with key-operated locks – but protect secluded windows and roof-lights with steel bars, grilles or shutters.Consider fitting shop-fronts with grilles or shutters to deter smash and grab raiders
Given time, almost any physical security can be overcome, consider fitting an Intruder Alarm system which will act as a deterrent and limit the time an intruder will have on your premises. Any alarm system should be fitted and maintained .
Closed Circuit Television (CCTV) can help deter and capture evidence of robbery. Any system should be fitted and maintained by an installer registered with a nationally recognised installation body such as - NSI (NationalSecurity Inspectorate) and SSAIB (Security Systems and Alarms Inspection Board).
When your premises are closed, lock away portable electronic equipment e.g. laptop computers in a secure cabinet .
Consider fitting access control locks on entrance doors to prevent intimidation or robbery.

Theft of money
Keeping cash on the premises overnight increases the chance of a break in:
• Keep as little cash on the premises as possible and keep it out of public view.

• Where possible, cash should not be left on the premises outside business hours.
• Empty the cash register over-night and leave the drawer open as this often deters thieves.

D.Protecting your staff and visitors from accidents. "Prevention is better (and cheaper) than cure".

- **Slips, Trips and Falls**

The most common type of workplace accident, these can be easily and cheaply prevented in most cases and will often bring other benefits.

• Keeping the premises clean, tidy, congestion-free and well lit will go a long way to preventing most of this type of accident.

• Clear up spillage promptly and post warning notices.

• Repair or replace damaged floor coverings immediately – especially on stairways and areas where the public have access.

• Keep a clearly marked first-aid kit available at all times.

Electricity

Electricity can, and does, kill and the law insists that your electrical installation must be safed .

• Ensure electrical equipment is only used for the purpose for which it was designed.

• Use a qualified electrician for electrical installation work and for regular testing of portable electrical items to ensure they are in good working order.

Fire safety

Carrying out a fire risk assessment is a legal requirement for all businesses (even one-person operations); this helps prevent fires and ensures swift evacuation of the premises by employees and the public in the event of a fire.

• Ensure you have clearly signed and unobstructed escape routes and that your staff are aware of the evacuation procedure. Arrange regular practices to reinforce this.

• Ensure that you make a specific member of your staff responsible for customers' and visitors' safety in the event of an emergency evacuation of the premises.

Manual handling/lifting

Preventing injuries caused by manual lifting of heavy items is also the subject of regulations and solutions to this problem can easily be achieved.

• If loads must be manually lifted, ensure they are carried by at least two people and that training in lifting techniques is provided.

• Provide mechanical equipment e.g. trolleys to assist staff in unloading and moving deliveries. In addition, ensure deliveries are as close as possible to the location where they will be stored or used.

Accident reporting and investigation

• Make sure that all accidents and incidents are recorded and investigated as lessons can be learned to prevent them in future. As long as the recording method is accessible and secure it will be accepted – computer records are fine.

F. Legislations that may affect business

We have mentioned some areas where legislation may affect your business - Fire Safety, Food Hygiene and Electricity. There maybe other regulations from other regulatory board like Food and Drug Administration (FDA) particularly on manufacturing, packaging and storing food. Be aware and knowledgeable.

How Much Have You Learned?

Self-Check 1.1

Directions: Select the letter with the best answer that will identify the type of hazard/accident in the workplace.

A. Protecting your property from fire;

B. Protecting your property from natural hazards;

C. Protecting your property from crime;

D. Protecting your staff and visitors from accidents

E. Legislation that may affect your business.

1. Cooking ranges, boilers and deep-fat fryers without fitted thermostats or emergency cutoff valves to turn off .
2. Non-visual inspections of all portable electrical items and electrical wiring.
3. Prepare a flood plan for your business
4. Consider putting shop-fronts with grilles or shutters to deter smash and grab raiders.
5. Keeping the premises clean, tidy, congestion-free and well lit will go a long way to preventing most of this type of accident.
6. Do make aisles and passageways sufficiently wide for easy movement and keep clear at all times.
7. Clear up spillage promptly and post warning notices.
8. Manufacturing and packaging standards should pass the regulatory board.
9. Only licensed electrical engineers should check and inspect electrical installations and wirings.
10. A food establishment should be in a free-flood area.

Refer to the Answer Key. What is your score?

How Do You Apply What You Have Learned?

Show that you learned something by doing this activity

Activity Sheet 1.1

Slogan/Poster Making Contest (Individual)

1. Draw/ make slogans/ posters on safety and hygiene practices in the workplace.
2. Use 2 x 4 feet illustration board, appropriate color medium and drawing tools.
3. Submit your output to your teacher for proper evaluation.

How Well Did You Perform?

Find out by accomplishing the Scoring Rubric honestly and sincerely. Remember it is your learning at stake!

ACCURACY (100%)	SCORING CRITERIA
Demonstrated and identified 5 types hazards and risks	
Demonstrated and identified 4 types of hazards ad risks	
Demonstrated and identified 3 types of hazards and risks	
Demonstrated and identified 2 types of hazards and risks	
Demonstrated and identified 1 type of hazards and risks	
Failed to demonstrate any type of hazards and risks	

LEARNING OUTCOME 2

Control hazards and risks

PERFORMANCE STANDARDS

- Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed.
- Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies.
- Personal protective equipment (PPE) is correctly used in accordance with organization OHS procedures and practices.
- Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol.

Materials

- Mask
- Gloves
- Goggles
- Hair Net/cap/bonnet
- Face mask/shield
- Ear muffs
- Apron/Gown/coverall/jump suit
- Anti-static suits

What Do You Already Know?

Pretest LO 2

Let us determine how much you already know about controlling hazards and risks. Take this test.

Direction: Write T if the statement is true and write F if it is false.

1. Correct level of grease and temperature must be observe when deep frying.
2. Caution must be observed when working with hot oil or objects
3. Washed utensils are to be dried by towel after manual or machine diswashing
4. Hot-holding equipments include only steam tables and hot cabinets
5. Hazards Analysis and Critical Control Point is a food safety system that helps identify and control any daanger of food contamination.

What Do You Need To Know?

Read Information Sheet 2.1 very well then find out how much you can remember and how much you learned by doing Self-check 2.1.

Information Sheet 2.1

Control hazards and risks in the workplace.

E. **Use** caution when working around hot oil.
F. **Get** trained in the proper use and maintenance of your deep fryer.
G. **Observe** all safety procedures and wear all protective equipment provided for your use while preparing hot items
H. .**Use** gloves and scrapers and other cleaning tools with handles provided by your employer.
I. **Use** the correct grease level and cooking temperatures for your deep fryer.
J. **Keep** stove surfaces clean to prevent grease flare-ups.
K. **Avoid** reaching over or climbing on top of fryers and other hot surfaces. Clean vents when oil is cool.
L. **Keep** floor surfaces clean and dry to prevent slipping or falling onto hot surfaces. Wear slip-resistant shoes. Floors should be cleaned often with grease-cutting solutions.

- **Do not** work closely to hot fryers when the floor is wet.
- **Do not** spill water or ice into oil. Do not store employee drinks by deep fryers. They could be easily bumped into the hot oil and cause a flare-up.
- **Do not** overfill or pour excessive amounts of frozen fries into deep fryer at one time. Overfilling causes excessive splashing and bubbling over of hot oil.
- **Do not** pour excess ice from fry packages into the fryer.
- **Do not** overheat the oil; use only manufacturer's recommended cooking temperatures.
- **Do not** move **or strain hot** oil containers; wait until the oil is cool!
- **Do not** store oil on floors by grill area. Someone could slip and fall into the oil.
- **Extinguish** hot oil/grease fires by using a class K fire extinguisher.

Example of kitchen hazards

List of unexpected kitchen hazards (and some suggestions about how to prevent them).

1. **Rinsing Raw Meat and Poultry.** Dean Cliver, PhD, an Institute of Food Technologists spokesperson on food and kitchen safety, says the USDA has backed off the idea that meat and poultry should be washed or rinsed—in fact, the organization's website says there's no need to do so. "Sometimes you may buy a chicken, and it has salmonella. If you cook it thoroughly, it would kill it," Cliver says. "Washing it might spread the salmonella around."


Rinsing raw meat and poultry

3.. **A Greasy Range Hood and Filter.** Captain Peggy Harrell of the Plano Fire Department in Texas says grease that has accumulated under your range hood and on the filter is "just the kind of thing that can start a grease fire." Keep the underside of your hood clean, and follow the manufacturer's guidelines for changing the filter regularly.

3. **Radon Gas.** Radon is a radioactive gas generated in rock soil that causes lung cancer—and sometimes collects in homes. The EPA says that radon is often found in water (people using wells rather than municipal water systems are at a higher risk), and is released when the water is agitated, as when washing dishes. The *New York Times* also recently investigated radon emission from granite countertops and cited studies that found some levels to be unsafe. The gas is not detectable by sight, smell, or taste, so the EPA suggests testing for it. Hardware stores sell inexpensive kits you can use to check the radon levels in your home.

4. **No Fire Extinguisher.** Do you have a fire extinguisher near your kitchen? Captain Harrell says you should (she even suggests that you give extinguishers as housewarming gifts). Look for an extinguisher that works on class A (ordinary combustibles), B (flammable liquids), and C (electrical fires), often called a multipurpose dry chemical extinguisher.

5. **Dirty Sponges.** Sponges harbor disease-causing bacteria and spread those bacteria around kitchens. A study by microbiologist Carlos Enriquez at the University of Arizona found salmonella in about 15 percent of the sponges examined. Dean Cliver says that research shows that microwaving sponges for about one minute sterilizes them. But, he says, “There’s a caveat: The sponges should be wet. It never occurred to me that someone might microwave the sponge when it’s dry.” A dry sponge can catch fire in a microwave.

6. **Carbon Monoxide (CO).** CO is another invisible, odorless gas that could be hanging around in your kitchen. The EPA says at moderate levels it causes headaches, dizziness, nausea, and fainting—and at high levels it can be fatal. The gas is emitted anytime combustion appliances (such as gas stoves) are used, but dangerous levels occur only when these appliances are misused or misadjusted. To be safe, the EPA suggests that you have your gas range and oven inspected annually by a professional; never use a gas oven to heat your home; and never burn charcoal indoors. You can pick up CO test kits and alarms/detectors at hardware stores.

7. **Mold.** The EPA says that mold exposure can cause allergies, asthma, and other respiratory problems. Mold grows in areas where moisture accumulates, such as near leaky plumbing (check under your kitchen sink). The organization says that water-damaged areas should be dried “within 24 to 48 hours to prevent mold growth.” If you have a mold problem, the agency recommends decreasing indoor humidity by fixing leaks, using dehumidifiers, and turning on exhaust fans whenever cooking or using the dishwasher.

8. **Overloaded Circuits.** The U.S. Fire Administration says that in urban areas, faulty wiring accounts for 33 percent of residential fires; many avoidable electrical fires are caused by overloaded circuits. Older apartments often have few outlets, so tenants use extension cords or power strips. But this isn’t safe, according to the FEMA

publication*Residential Building Electrical Fires.* Because heat-producing cooking appliances use a lot of power, you should be particularly careful where you plug them in.


Overloaded circuits

9. **Bad Storage Habits in the Refrigerator.** “The fridge is one place we ought to be paying attention,” says Dean Cliver. “Don’t put drippy raw stuff over the salad bar.” The USDA Food Safety and Inspection Service suggests placing raw meat, seafood, and poultry in sealed containers or plastic bags to prevent their juices from contaminating other foods.


Bad storage habits in the refrigerator

10.Leaving High Heat Unattended. Peggy Harrell says that the most important thing you can to do be safe in the kitchen is to stay close when using high heat on the stovetop. If you must answer the door or the phone, she suggests keeping a spoon or a potholder in your hand so you have a visual reminder to get back in the kitchen asap

11. **Stove and Oven Hazards**
Whether your stove is gas or electric, it can pose a safety risk for every member of the household. Many people have burned their hands on a hot stove or as a result of

reaching into an oven without a proper oven mitt. The risk of burns, however, is not the only reason that stoves can be dangerous:

Drop-in stoves can tip over if not properly secured, particularly if someone leans on the door when it is open. To prevent this type of kitchen hazard, verify that your stove is properly secured.

Pans not safe for direct heat can shatter if placed directly on a hot cook top after being removed from the oven. Always use trivets beneath pans when you remove them from the oven, regardless of what surface they are being placed on.

Leaving stove burners on under empty pots and pans can be a fire hazard. Verify that the stovetop is turned off when food is finished cooking.

Pots and pans filled with hot food can easily be knocked off if the handles are not situated properly. Always turn handles so they are facing away from the front of edge of the stove.

Failure to properly clean out the oven can cause fires while cooking. Clean the oven regularly, and never leave an oven unattended while in use.

12. Garbage Disposals

Garbage disposals are common in many homes, and using them improperly can result in

injury.

Make sure that every member of the household fully understands how to operate the disposal safely.

Never place your hand or fingers in the drain while the disposal is running.

Never flip the switch while poking around in the drain.

13. Small Appliances

Most kitchens house a variety of small appliances, including blenders, mixers, crock pots, toasters, can openers, etc. Here are a few tips to keep in mind:

Keep all small appliance cords away from the edges of the countertop to avoid catching a cord and knocking the appliance off the counter.

Keep small appliances and their power cords away from the sink or other water sources while in use to avoid a shock hazard.

Never reach into appliances like mixers and blenders while they're running.

Keep the crockpot away from the edge of the counter so children can't accidentally touch it and get burned by the hot outer housing.

14. Kitchen Tools

Most kitchens house a variety of small appliances, including blenders, mixers, crock pots, toasters, can openers, etc. Here are a few tips to keep in mind:

Keep all small appliance cords away from the edges of the countertop to avoid catching a cord and knocking the appliance off the counter.

Keep small appliances and their power cords away from the sink or other water sources while in use to avoid a shock hazard.

Never reach into appliances like mixers and blenders while they're running.

Keep the crockpot away from the edge of the counter so children can't accidentally touch it and get burned by the hot outer housing.

15. Knives

Knives are among the most common kitchen hazards, particularly if they are not stored properly.

Store your sharpest knives separate from the utensil drawer, either in a knife block or case.

Keep the knife block out of reach of children, and put it in a safe place where it won't get knocked over.

When storing knives in blocks, be sure that the handles are positioned so that they can be gripped easily.

Place the blade of the knife in the block with the sharp side pointing up. This will help preserve the edges, as well as make it easy for household members to know what to expect when pulling out a knife.

Knife cases should be firmly sealed so there's no risk of knives accidentally being exposed.

16. Household Chemicals

Many people store their chemical products, such as cleaning supplies and insecticides, in the kitchen. The most common storage spot for these types of products is underneath the sink. This places the products within easy reach of children, and even pets, if cabinet doors are not properly closed. Many of these products are harmful or fatal if ingested, and can also cause burns, skin irritation, and other problems.

Install safety locks on the doors of the cabinet where any potentially dangerous chemicals might be stored.

Store bleach and ammonia in separate areas because they can produce a dangerous reaction if they come in contact with one another.

Keep the number for poison control posted on your refrigerator or inside a cabinet door in case you need help in a hurry

Be Aware of Kitchen Hazards

It's a good idea to periodically review how your kitchen is set up so you can make sure that everything is positioned and secured in a safe manner. It's also important to keep a fully-charged fire extinguisher and first aid kit handy in the event of a worst case scenario. When you are aware of the most common kitchen hazards, it's possible to take steps to prevent unnecessary injuries and accidents from occurring

How Much Have You Learned?

Self-Check 2.1

Direction: Enumerate at least five (5) ways on how to control hazards and risks in the kitchen.

1.

2.

3

4.

5.

Refer to the Answer Key. What is your score?

How Do You Apply What You Have Learned?

Show that you learned something by doing this activity

Activity Sheet 2.1

Group Work.

- Observe activity in the school cafeteria. With the lessons learned from the previous module, do the following:
    1. Identify work hazards that can lead to injuries in the school kitchen and adjacent areas.
    2. List consequences of work hazards of not taking action
    3. Provide solutions to work hazards identified.
- Use this template for clear presentation of your output.

Hazard/s	Consequence	Solution

- Submit your work to your teacher for proper evaluation.

How Well Did You Perform?

Find out by accomplishing the Scoring Rubric honestly and sincerely. Remember it is your learning at stake!

ACCURACY (100%)	SCORING CRITERIA
Demonstrated and identified 5 ways to control hazards and risks	
Demonstrated and identified 4 ways to control of hazards ad risks	
Demonstrated and identified 3 ways to control hazards and risks	
Demonstrated and identified 2 ways to control hazards and risks	
Demonstrated and identified 1 way to control hazards and risks	
Failed to demonstrate any ways to control hazards and risks	

Congratulations! You did a great job!

REFERENCES

- Mary Frey Ray. Evelyn Jones Lewis. **Exploring Professional Cooking,** Revised, Chas A. Bennet Co., Inc., Peoria, Illinois 61614
- Amy Brown, **Understanding Food,** 2nd Edition, Thomson Woodworth
- www.chow.com

Answer key
Lesson 1
Pre-test LO1
1. Aluminum
2. Equipment
3. Garlic presser
4. Grater
5. Kitchen Knives
6. Measuring Cup for Dry Ingredients
7. Measuring spoon
8. Scraper
9. Teflon
10. Wooden spoon

Sel-check 1.1
1. Stainless steel
2. Plastic and hard rubber
3. ☆
4. Spatula
5. ☆
6. ☆
7. ☆
8. Serving tongs
9. Whisks for blending, mixing
10. ☆

Pre-test LO2
1. Detergents
2. Solvent cleaners
3. Acid cleaners
4. Abrasive cleaners
5. Chlorine
6. Iodine
7. quaternary ammonium
8. Concentration
9. Temperature -
10. Contact time
11. Sweep the kitchen floor
12. Prepare vinegar solution and with the mop apply it onto the kitchen surfaces
13. Make an all-purpose cleaner in a spray bottle
14. Spray this solution onto kitchen surfaces and wipe off with a damp cleaning rag.
15. Fill a few bowls with about 1/2 cup each of baking soda. Place these around your kitchen to absorb odor and keep the kitchen smelling fresh.

Self-check 2.1

Chemical	Advantage	Disadvantage
Chlorine	• Effective on a wide variety of bacteria; • highly effective; • not affected by hard water; generally inexpensive	• Corrosive, • irritating to the skin, • effectiveness decreases with increasing pH of solution; • deteriorates during storage and when exposed to light; • dissipates rapidly; • loses activity in the presence of organic matter
Iodine	• Forms brown color that indicates strength; • not affected by hard water; • less irritating to the skin than is chlorine; • and activity not lost rapidly in the presence of organic matter.	• Effectiveness decreases greatly with an increase in pH (most active at pH 3.0; • very low acting at pH 7.0); • Should not be used in water that is at 120oF or hotter; • and might discolor equipment and surfaces.
Quaternary Ammonium Compouds	• Nontoxic, • odorless, • colorless, • noncorrosive, • nonirritating; • stable to heat and relatively stable in the presence of organic matter; • active over a wide pH range	• Slow destruction of some microorganisms; not compatible with some detergents and hard water

Self-check 2.2

1. X
2. √
3. √
4. √
5. √

Self-check 2.3

1. B
2. D
3. A
4. E
5. C

Pre-test LO3

1. Soak
2. Cloth
3. Storage
4. Dry
5. Contamination

Self-check 1.1

1. Proper Storage and Handling. Proper storage and handling of cleaned and sanitized equipment and utensils is very important to prevent recontamination prior to use.
   Cleaned and sanitized equipment and utensils must be:
   • stored on clean surfaces; and
   • handled to minimize contamination of food contact surface.
2.

- They should be stored in a clean dry place adequately protected against vermin and other sources of contamination
- Cups, bowls, and glasses shall be inverted for storage.
- When not stored in closed cupboards or lockers, utensils and containers shall be covered or inverted whenever practicable. Utensils shall be stored on the bottom shelves of open cabinets below the working top level.
- Racks, trays and shelves shall be made of materials that are imperious, corrosive-resistant, non-toxic, smooth, durable and resistant to chipping.

Drawers shall be made of the same materials and kept clean. Full-lined drawers are not acceptable, but the use of clean and removable towels for lining drawers is acceptable

Lesson 2

Pre-test LO1

I.

1. 1 fluid ounce
2. 250 ml
3. 7 oz
4. 1/2 teaspoon
5. 120 ^{O}C

II.

1. Standardized
2. Cooling
3. Conduction
4. Pack
5. Zero

Self- Check 1.1

1. 85 ml
2. 45 g
3. 15 mm
4. 1.25ml
5. 60 ^{O}C

Self- Check 1.2

Self- Check 1.2

1.	– 1 slice bread; – 1/4 cup cracker crumbs; – 2/3 cup rolled oats;

2. 1 cup milk.
3. 1 1/2 tsp lemon juice or vinegar.
4. 7/8 cup all-purpose flour (1 cup less 2 Tbsp).
5. 10 large marshmallows.
6. 1/3 cup instant nonfat dry milk plus 7/8 cup water
7. 1 cup rolled oats, browned (in baked products).
8. 1/4 cup melted margarine, butter, bacon drippings, shortening or lard.
9. – 1 cup granulated sugar;
   – 1 cup granulated sugar plus 1/4 cup unsulphured molasses;
   – 1/2 cup liquid brown sugar.
10. – 3/4 cup granulated sugar (for uses other than baking).

Pre-test LO2

Items	Purchase cost/buying price	Selling price	Peso markup	Percentage mark up
Bibingka	5.00	7.00	2.00	29%
Cup cake	7.00	10.00	3.00	30%
Pulvoron	3.00	4.00	1.00	25%
Chicharon	25.00	35.00	10.00	29%
Yellow corn	10.00	15.00	5.00	33%

Self-check 2.1

Item	**Unit coct**	**Total Cost**	**Peso mark-up**	**Selling Price per serving**
2 K chicken	115.00/kilo	230.00		
1 head of garlic	50.00/kilo 20pcs/kilo	2.50		
4 Tbsp soy sauce	15.00/bottle Approx. 32T	1.90		
1 tsp ground black pepper	1.00/ small pack ½ t/pack	2.00		
1/2 cup vinegar	12.00/bottle Approx. 2 C/bottle	3.00		
2 Tbsp cooking oil	40.00/bottle Approx. 32T	2.50		
TOTAL		**241.9**	**120.95**	**15.118**

$$\text{Selling price} = \frac{\text{Total cost + Peso mark-up}}{\text{No. of yield}}$$

SP = <u>241.90 + 120.95</u> = <u>362.85</u>

24 24

SP = P 15.118

ANSWER KEYS

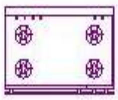
Lesson 3– INTERPRET KITCHEN LAY-OUT

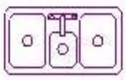
WHAT DO YOU ALREADY KNOW?

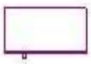
LO1 . Read and interpret kitchen plans

Pretest 1.1

1. 

2 

3. 

4. 

5. 

Self Check 1.1

a. LO1
   1. b
   2. d
   3. e
   4. a
   5. c

LO 2. Create kitchen lay-out

Pre-test

1. Work simplification
2. Food storage station, preparation station, clean-up station
3. Work simplification
4. G-shaped

5. U-shaped

Self Check 2.1
LO 2
1. Food storage station, preparation station, clean-up station
2. G-shaped
3. Work simplification
4. Work simplification
5. U-shaped

LESSON 4. PRACTICE OCCUPATIONAL HEALTH AND SAFETY
Lo1. Identify hazards and risks
Pre test
1. A
2. A
3. B
4. C
5. D
6. D
7. D
8. E
9. A
10. B

Self check
LO 1
1. A
2. A
3. B
4. C
5. D
6. D
7. D
8. E
9. A
10. B

LO 2. Control hazards and risks
Pre test
1. T
2. T
3. F
4. F
5. T

Self check 2.1
(In any order)
1. Household chemicals- Install safety locks on the doors of cabiet where dangerous chemical stored.
2. Knives – store your sharpest knives separate from utensil drawer, either in a knife block or case.

3. Small appliances**-** never reach into appliances like mixers and blenders while they are running.
4. Never leave high heat unattended.
5. Overloaded circuits
6. Bad storage habits in the refrigerator

Acknowledgement

This Learning Module was developed for the Exploratory Courses in Technology and Livelihood Education, Grades 7 and 8 of the K to 12 Curriculum with the assistance of the following persons:

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