



RCCTA Resource Center for CareerTech Advancement

https://www.okcareertech.org/educators/resource-center

Copyright 2019

Oklahoma Department of Career and Technology Education Resource Center for CareerTech Advancement

All rights reserved.

Printed in the United States of America by the Oklahoma Department of Career and Technology Education Stillwater, OK 74074-4364

This publication, or parts thereof, may not be reproduced in any form photographic, electrostatic, mechanical, or any other methods for any use including information storage and retrieval, without written permission from the publisher.

Use of commercial products in these instructional materials does not imply endorsement by the Oklahoma Department of Career and Technology Education.

Web site addresses were accurate and all content on referenced web sites was appropriate during the development and production of this product. However, web sites sometimes change; the Resource Center takes no responsibility for a site's content. The inclusion of a website does not constitute an endorsement of that site's other pages, products, or owners. You are encouraged to verify all web sites prior to use.

The Oklahoma Department of Career and Technology Education does not discriminate on the basis of race, color, national origin, sex/gender, age, disability, or veteran status.

Permission granted to download and print this publication for non-commercial use in a classroom or training setting.

Knowing your way around a commercial kitchen is key to a successful culinary career. Learning the basics is a first step in this process. This unit will cover many of those basics from reasons for using a standard recipe card to how to time preparation. Assignments will help reinforce what you have learned.

Unit Topics

- Reasons for using a standard recipe card
- Parts of a standard recipe card
- Steps to follow when using a standard recipe
- Steps to follow when writing a standard recipe
- Requisitions
- Reasons for substitutions and tips for making substitutions
- Measurement basics
- Standard weights and measures
- Equivalents of weights and measures
- Can sizes and their equivalents
- Standard measuring tools
- Methods of measuring dry ingredients
- Ensuring accurate measurement of dry ingredients
- Measuring moist ingredients
- Alternative measurement methods
- Mise en place
- Procedures for organizing work and assembling supplies
- Guidelines for timing food preparation

Assignments

- Write a standard recipe.
 - Convert weights and measures using a conversion table.
 - Compare accuracy of methods of measuring.
 - Weigh and measure dry ingredients.
 - Weigh and measure liquid ingredients.
 - Read and follow a standard recipe.







Reasons for a standard recipe card

- The number of portions produced in a recipe are known, which helps with grocery purchasing and kitchen output timing.
- The cost per serving breakdown helps menu planners price food offerings.
- Budgeting of funds is easier, as the same amount of ingredients used helps the kitchen manager predict cost expenditures.
- The same amounts of ingredients will ensure food has a consistent taste, regardless of who prepares it.
- Beginners need the simplicity of a set recipe.
- The card can serve as a baseline for an expert to adjust the recipe as desired.
- In the event of kitchen staff turnover, new employees can prepare the same food taste customers enjoy and expect.

Parts of a standard recipe card

- Recipe name
 - Listed on the card as the customer will see it on the menu
 - Name of recipe gives a hint of ingredients/taste of item
- Food category
 - Indicates where the item will be found on the menu
 - Common types include beverage, bread, vegetable, salad, soup, appetizer, entrée, main course, and dessert
- Item/recipe number
 - Usually a number, but can be a combination of numbers and/or letters
 - Provides a system of filing
- Portions yielded
 - Indicates the number of portions/servings a recipe will make
 - Gives the food preparer the chance to make a recipe larger or smaller, depending on the number of expected sales
- Portion size
 - Amount of batch measured onto the customer's plate
 - Usually measured in cups or ounces

- Portion cost
 - Breaks down the cost of each ingredient in one portion (See individual commodity cost.)
 - Cost of each ingredient is added together, helping the menu planner devise a price
- Individual commodity cost
 - Displays the cost of each ingredient
 - Used to further break down the cost of the ingredient in each portion (See portion cost.)
- Date costed
 - Because prices change, they need to be updated regularly
 - Serves as a record indicating the last time the item was purchased
- Selling price
 - Price the restaurant will charge for this recipe after it's prepared
 - Based upon the price of ingredients, overhead, and profit margin
- Ingredients
 - Listed on the card in order of use in preparing the dish
 - Usually specific (See ingredient specifications.)
- Ingredient specifications
 - Specific things about the ingredient that will make the recipe a success
 - Very broad topic
 - Examples: Fresh, dried, homogenized, kosher
- Quantity of ingredients
 - Often specified in standard units
 - Examples: Teaspoons, cups, ounces, pounds, liters
 - Varies according to the country
 - Examples: France uses the metric system of measurement; the United States uses the standard system
- Production method
 - Listed in sequential order next to the corresponding ingredient(s)
 - Variety of production methods
 - Examples: Braise, sauté, mix, pare, knead, fold, whip, blend, bake
- A photograph of the prepared food

Sample Recipe Card

Speedy Pie C Yield: 8 slices Date Costed:	S *	Recipe # Category		
Ingredients Plain flour	Amount 1 ½ c.	Unit Cost 2 oz. = 4¢	Multiplier .25	Total Cost \$0.38
Firm butter	2 ½ T.	8 oz. = 35¢	2	\$0.70
Egg yolk	1	23¢ each	1	\$0.23
Water	1–2 T.	4¢ per oz.	2	\$0.08

Place flour (do not sift) and butter in food processor and process until the consistency of bread crumbs. With food processor running, add egg yolk and a little water to make the pastry ball by itself. Pack and roll out dough.

* Portion Size: In a 9" round pie dish, the size of the slice is approximately 4 ¼" across the back edge of the crust and then from the crust to the tip end is 4 ¼" and the height of the slice is 2".

Steps to follow when using a standard recipe

- 1. Select your recipe.
- 2. Read the recipe card thoroughly.
- 3. Determine the number of servings needed to adequately meet needs.
 - If more or fewer servings are needed than indicated on the recipe card, adjust each ingredient accordingly.
 - To adjust a recipe, divide the ingredient amount into the total number of servings for the base amount of ingredient to make one serving; then, multiply that amount by the total number of servings needed.
 Example: If a recipe that serves 100 people requires 10 cups of milk, then one serving would require 1/10 (0.1) cups. If the cook wanted to reduce the recipe to serve 50 people, then he would only need 5 cups of milk (50 servings X 0.1 cups = 5 cups of milk).
- 4. Determine the amount of time needed in each step.
- 5. Some recipes require extra time.

Examples: Meat marinated overnight; one cooked dish added to another cooked dish

 If a recipe takes extra time, check to see if it's feasible to begin the steps a day early (or earlier in the day Examples: Make bread dough early to give it time to rise. Put frozen items in the refrigerator a day early to allow them to thaw; marinate meat in the refrigerator overnight.

Note: If parts of a recipe are begun early, the cook will need to make sure he or she is following proper safety and sanitation requirements to avoid foodborne illness outbreaks.

6. Check to make sure there is enough of all needed ingredients.

- If there is a particular ingredient that is stocked in the pantry, cupboard, freezer, or refrigerator, check the contents for freshness and quantity.
 - Examples: Check expiration date on milk; make sure none of the fruit has molded
- If there are some ingredients missing from the kitchen, they will need to be purchased before the recipe can be begun.
- 7. Preheat the oven, if needed.
- 8. Follow personal safety and sanitation guidelines.
 - Make sure hair is pulled back from face.
 - Clothing should be kitchen-appropriate.
 Example: Clean, white, cotton chef's apron/smock
 - Remove all jewelry.
 - Thoroughly wash the hands with soap and warm water.
- 9. Set out tools and utensils needed to implement the recipe.
- 10. Gather all of the correct ingredients.
 - Keep hot items hot and cold items cold to prevent contamination.
 - Make sure all fruits and vegetables have been thoroughly washed and placed in the proper container.
 - Place ingredients in containers on the counter (unless they are temperature sensitive) where they can readily be used.
- 11. Thoroughly wash the hands with soap and warm water.
- 12. Follow all the steps in sequential order as indicated on the recipe card.

Note: Do not skip or reverse steps.

- Measure the ingredient.
- Put it in the proper bowl, container, pan, cutting board, etc.
- Apply the proper procedure.

Examples: Chop, deglaze, bake, juice, mince, fold, mix

- 13. Perform any additional steps needed, such as garnishing, placing in refrigerator overnight, etc.
- 14. Place the finished product in a temperature-safe environment, or serve immediately.
- 15. After all steps are completed, thoroughly clean and sanitize all work spaces and tools used.

Process for writing a standard recipe

• Find a recipe in a cookbook or on the Web; if no recipe is available, then create a new one.

Note: Sometimes, cooks will have a basic recipe with ingredient amounts memorized, such as "mom's recipe." This recipe is created and then slightly altered with cooking style or method of presentation. If made for a restaurant, then the recipe should be measured, written down, and documented so future cooks can duplicate it.

- The process of creating a totally new recipe is called "cooking from scratch."
- Follow a process to write a new recipe.
 - Identify your needs.
 - Select course.

Examples: Main dish, dessert, complementary food dish, appetizer

• Select a primary base for your dish.

Examples: Meat, fruit, bread

- Choose secondary flavorings.
 - Flavor sensation should complement primary base.
 - Can be a vegetable, sauce, marinade, seasoning, spice, gravy, soup, etc.
 - Identify the best method of cooking or preparing the dish.

Examples: Mix and chill, fry, broil, bake, boil, sauté

• Get an idea of the presentation or garnishment methods that would make the dish look appealing.

Example: Roasted turkey drizzled with warm cranberry sauce served on a lettuce leaf

Note: Cooking or presentation style can change with the recipe as the cook experiments in the kitchen. There is no rule stating the cook cannot change his or her mind, however, any changes should be noted on the recipe card.

- Make a shopping list and purchase any needed items.
 - Write the price of each ingredient on the recipe card.
 - Prices can be used to cost each portion later on.
- Thoroughly wash hands with soap and warm water, and thoroughly dry with a clean cloth.
 - If needed, prepare ingredients by applying standard methods.

Examples: Chop, shred, peel, wash

- Measure ingredients used with standard tools, and keep track of measurements by writing them on the recipe card.
- Write down each step used to make the recipe on the card
- Experiment in the kitchen with the ingredients for consistency and flavor.
 - Flour can thicken ingredients, eggs make ingredients coagulate, and water weakens the mixture.
 - Certain flavorings or seasonings can add interest to a menu or dish.

Examples: Steak marinated in red wine, pecan crusted trout, lemon basil pesto, seasoned salt sprinkled on fish

• Using a clean spoon, taste the recipe to make sure it tastes appealing.

Note: If tasting a recipe, only use a spoon once to prevent the spread of foodborne illness. Also, never taste any raw ingredients that could cause illness, such as raw eggs or uncooked chicken.

- Adjust flavors by adding more complementary ingredients, if needed, until it tastes good.
- If any adjustments are made to the recipe, they should be noted in the ingredients or steps of the recipe.
- Even the smallest adjustment can make a big difference in taste of recipe, so be careful not to add too much of an ingredient to a recipe; it is easy to spoil an entire recipe with one small adjustment.
- Note the number of servings created by the recipe on the card.
- Clean and disinfect all surface areas, tools, and utensils.

Requisitions

Note: The terms purchase order (P.O.) and requisition are often incorrectly used interchangeably in kitchens.

- Requisition—Written request for food items to be obtained from the storeroom
- Items in the storeroom have already been purchased.
- Items are held in the storeroom to control food waste and shrinkage.
- A requisition provides the person ordering food a document to identify what food has moved out of the storeroom and should be reordered.
- Parts of a requisition
 - Requisition number
 - Contact information for the person filling out the requisition
 - Delivery location
 - Account number
 - Product information
 - Item number
 - Item description
 - Quantity needed
 - Date item is needed



- Person requesting the item
- Authorized signature and date

Requisition Form

REQUISITION

DATE REQUISITION NO.

Ship to —

Item No.	Quantity	Description



Authorized Signature

- Requisition process
 - Review menus.
 - Determine quantity of food items required for each meal.
 - Fill out the requisition according to guidelines of company.
 - Include a breakdown on anticipated number of guests by category.
 Examples: Staff, faculty, students, outside guests
 - Chef or manager should sign the requisition.
 - Submit the requisition to the proper stockroom manager, who will pull the items and deliver them to the kitchen.
 - Inspect and inventory the items received and mark the costs and quantities in the budget log.

Measurement basics

Note: Weight is a measurement that tells how heavy something is, while to measure is to obtain a specific amount of food by volume.

- Three types of measurement
 - Measuring—Utilizes measuring cups, spoons, and glasses to indicate the volume, or "amount of space taken up"
 - Counting—Involves physically "counting out the correct number of ingredients"
 - Weighing—Utilizes a scale to measure the pull of gravity on an object, or "how heavy it is"
- Reasons for accurate measuring
 - Measurement tools help a cook follow a recipe as indicated.
 - Accuracy yields a higher quality product.
 - If the same amount of ingredients are used, the cook will yield the same flavorful taste.
 - To control quantity

Note: If the recipe yield is for 50 three-ounce portions, the food items in the recipe should be correctly weighed and measured and the food correctly prepared or the yield will be more or fewer than 50 three-ounce portions.

• To have consistent quality

Note: Accuracy results in consistent flavor and appearance.

• To save time

Note: If the yield is too low, more food may need to be prepared.

• To prevent food waste and save on food cost

Note: If the yield is too high, there will be excess food to be stored or disposed.

- Too much or too little of an ingredient can ruin the entire batch.
- Types of ingredients to be measured
- Dry

Examples: Flour, sugar, rice, cocoa powder, brown sugar, cornmeal, baking soda/powder, salt, herbs, coconut flakes, bread crumbs, oatmeal, nuts (pecans, walnuts, peanuts, almonds)

Liquid

Examples: Water, milk, alcohol, etc.

Sticky

Examples: Honey, oil, molasses, corn syrup, sour cream, yogurt, applesauce

• Moist

Examples: Solid fats (lard, butter, margarine, shortening) and liquid fats (vegetable oil, corn oil, canola oil, olive oil, peanut oil)

• Always weigh or measure each ingredient listed in the recipe before proceeding.



Standard weights and measures and their abbreviations

- Standard/U.S. units of measure
 - Ounce—oz.
 - Fluid ounce—fl. oz. or fl oz
 - Degrees Fahrenheit—°F
 - Pound—lb. or #
 - Teaspoon—t. or tsp.
 - Tablespoon—T. or Tbsp.
 - Cup—C. or c.
 - Pint—pt.
 - Quart—qt.
 - Gallon—gal.
 - Barrel—bbl.
 - Bunch—bch. or bu.
 - Case—cs.

- Metric units of measure
 - Gram—g.

٠

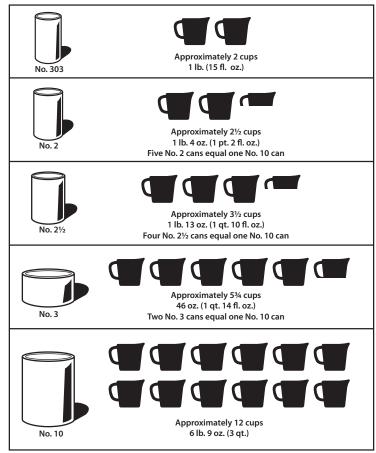
- Liter—l.
- Milliliter—ml.
- Meter—m.
- Degrees Celsius—°C

Equivalents of weights and measures used in standard recipes

Note: Weights and measures of liquid and dry ingredients can vary. If in doubt, use a conversion table. This will prevent errors and thus ensure a quality product.

- 1 tablespoon = 3 teaspoons = $\frac{1}{2}$ fluid oz.
- 1 cup = 16 tablespoons = 8 fluid oz.
- 1 pint = 2 cups = 16 oz.
- 1 quart = 2 pints = 32 oz.
- 1 gallon = 4 quarts = 128 oz.
- 1 pound = 16 oz.

Can sizes and their equivalents



- Buffet can
 - Contains 1 pound (15 fluid ounces) of product.
 - Yields approximately 2 cups.
- No. 2 can
 - Contains 1 pound, 4 ounces (1 pint, 2 fluid ounces) of product.
 - Yields approximately 2 ¹/₂ cups.
 - Five No. 2 cans equal one No. 10 can.
- No. 2 ¹/2 can
 - Contains 1 pound, 13 ounces (1 quart, 10 fluid ounces) of product.
 - Yields approximately 3 ¹/₂ cups.
 - Four No. 2 $\frac{1}{2}$ cans = One No. 10 can.
- No. 5 can
 - Contains 3 pounds, 3 ounces.
- No. 10 can
 - Contains 6 pounds, 10 ounces of product.
- Smaller can sizes

Size #	Weight	Fluid Ounces	Cups	Servings
1/8	2.5 oz.	2.5	1⁄4	1⁄2
1⁄4	4 oz.	4.1	1⁄2	1
3/8	6 oz.	5.8	3⁄4	1
1/2	8 oz.	8.3	1	2
#1 (or Picnic)	10-11 oz.	10.5	1 1⁄4	2-3
12 Ounce Vacuum	12 oz.	12	1 ½	3-4
#211	12 oz.	13	1 ½	3-4
#300	13 ½ oz.	14.6	1 3⁄4	3-4
#303 (or #1 Tall)	1 lb.	16.2	2	4
#2	1 lb. 3 oz.	19.7	2 1⁄2	5
#2 1⁄2	1 lb. 13 oz.	28.6	3 1⁄2	7
#3	1 qt. 13 fl. oz.	49.6	4	8
#5 (or 3 Cylinder)	3 lb.	56.6	7 ¼	10-12
#10	6 lb. 8 oz.	104.9	13	25

Standard measuring tools

- Liquid measuring glass
 - Liquids over 1/4 cup should be measured in a liquid measuring glass.
 - If liquid measurement needed is less than 1/4 cup, use a measuring spoon.
 - The sides of the a liquid measuring glass are usually marked every 1/4 cup, 1/2 cup, and whole cup along the edge.
 - The amount in a dry measuring cup is different in a liquid measuring glass, so it is important to use the proper liquid measuring glass for liquid ingredients.

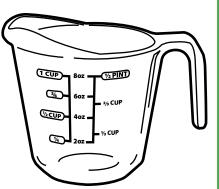
Example: 8 oz. water in a liquid measuring cup is equivalent to 7 oz. water in a metal nesting measuring cup.

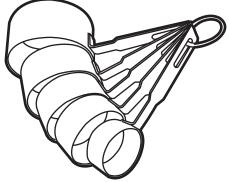
- Commonly made of heatproof glass, but plastic ones are also sold.
- Most have handles for easy pouring and safety in the event a hot liquid is in the glass.
- Usually come in different sizes to hold 1–8 cups of liquid.
- Always place liquid measuring cups on a flat surface and read the measurement from eye level to get the correct amount.
- Nested dry measuring cups
 - Called "nesting" cups because each consecutive smaller cup can fit, or "nest," in the next size larger cup.
 - Commonly made from metal or plastic.
 - Have a handle to pick up a full cup and dump it into a bowl.
 - Most common dry measuring cup nest consists of 1/4 c., 1/3 c., 1/2 c., and 1 c. sizes.
 - The rim around the top of a cup is very flat for ease of using a straight edge to level off the top of a full cup of ingredient.
- Nested measuring spoon set

Note: Nested measuring spoon sets may include a pinch or dash measuring spoon.

- Called "nesting" spoons because each consecutive smaller spoon can fit, or "nest," in the next size larger spoon.
- Commonly made from metal or plastic.
- Most common measuring spoon nest consists of ½ t., ½ t., ½ t., 1 t., ½ T., and 1 T. sizes.
- Do NOT use table flatware, as the sizes differ.

Example: A flatware "tablespoon" holds a lot more than a measuring "tablespoon."



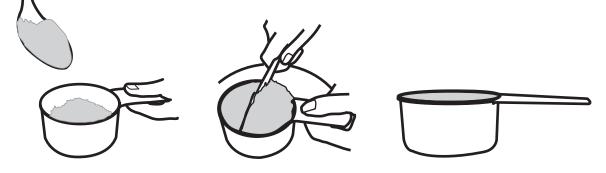




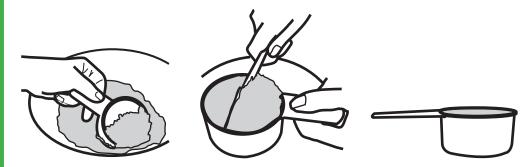
- Great for measuring small amounts of liquid fat, baking soda, salt, vanilla, and herbs.
- Rounded bottoms allow for ease of scooping ingredients.
- Measure with spoons over a separate bowl or sink, as the excess ingredient falling and being leveled off will fall into the batch and potentially ruin it.
- Flat rim helps the cook level the top of a full spoon with a straight edge for accuracy.

Methods of measuring dry ingredients

• Spoon and sweep—Ingredient (such as flour, coconut flakes, or bread crumbs) is fluffed up in the bag or container, lightly spooned into a measuring cup, and then leveled off with a straight edge.



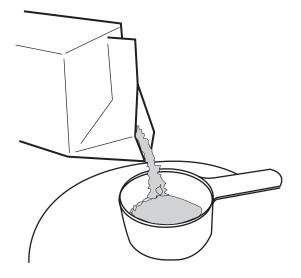
• Scoop and sweep—Measuring tool is dipped into the bag or container, ingredient is scooped up, and then leveled off with a straight edge.



- This method is used on most dry ingredients, with the exception of flour.
- Brown sugar is packed into the measuring cup, rescooped, packed again, and leveled off at the rim of the cup.
- Sifting—Ingredient is shaken through a sifter, or a cup with a mesh bottom to separate and aerate the ingredient particles.



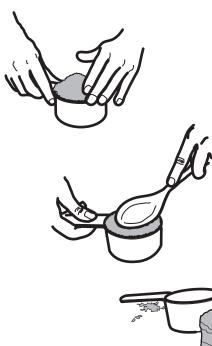
- "Flour, sifted" means measure the flour first, then sift.
- "Sifted flour" means sift the flour, then measure it.
- Pouring—Ingredient is poured directly into the measuring tool.



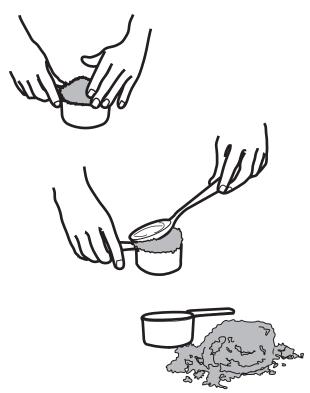
- Commonly used with measuring spoons
- Salt is commonly poured into a measuring spoon over the sink, NOT the mixing bowl a little salt goes a long way!

Methods of accurate measurement of dry ingredients

• Firmly packed—Measure the ingredient into a cup and then firmly press down with a spatula, spoon, or hand; repeat the process until as much ingredient is pressed into the cup as possible.

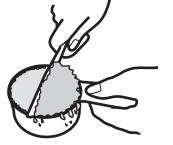


• Lightly packed—Measure the ingredient into a cup and then lightly press down just firmly enough to remove any pockets of air.



• Even/level—Measure the ingredient into a cup so that it's overflowing, then level it off across the top with a straight edge, such as a butter knife or frosting spatula.

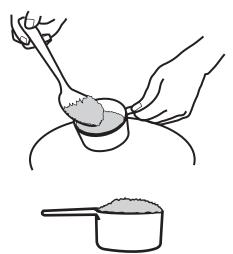






- Use a flat tool with a straight edge to level off excess ingredient.
- Common straight edge tools around the kitchen include a spatula, butter knife, and icing spatula.
- When leveling, do it over a separate bowl or sink (not the mixing bowl) to avoid getting too much ingredient into the batch.

 Rounded—Measure the ingredient into a cup so that it's overflowing, allowing it to pile up above the rim in a soft, rounded manner.



• Heaping—Measure the ingredient into the cup, piling as much extra ingredient as possible on top; do not level off with a straight edge, leave ingredient on top.



- Chopped—Ingredient is chopped, either before or after measurement.
 - "Nuts, chopped" indicates the nuts should be measured then chopped.
 - "Chopped nuts" indicates the nuts should be chopped then measured.

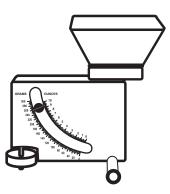
Methods for measuring moist ingredients

- Solid fats (butter, margarine, shortening, lard), brown sugar, and peanut butter are all measured in measuring cups or spoons.
 - If measuring peanut butter, spray the measuring cup or spoon with vegetable oil so it will easily slip from the tool.
 - Spoon or scoop into the measurement tool.
 - Press the ingredient down into the cup or spoon with a spatula to get rid of air pockets trapped at the bottom.
 - Use a straight edge to level off the top.
 - Brown sugar should be packed down with a hand or spatula.
 - Many solid fats are marked on the wrapper in measurement increments so that measurement occurs with the slice of a knife.

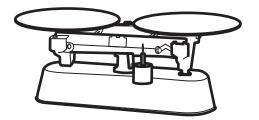
- Viscous, sticky ingredients (honey, oil, molasses, corn syrup, sour cream, yogurt, applesauce) are measured in a measuring glass.
 - Spray the measuring cup, glass, or spoon with cooking oil before putting in the sticky ingredient so it will easily slip from the measuring glass.
 - Set the measuring glass on a flat surface, pour or spoon in ingredient until level, read measurement at eye level to ensure the proper measure.

Alternative measurement methods

- Counting
 - Some food items can be counted out.
 - Examples: Eggs, bagels
- Sold in dozens, or groups of 12
 - One dozen = 12
 - Baker's dozen = 13
 - Half dozen = 6
 - Gross = 12 dozen, or 144
- Weighing
 - Food is measured based upon its weight instead of its volume (i.e., measuring cups, glasses, and spoons).
 - Meat is commonly weighed instead of measured.
 - Number systems
 - Avoirdupois scale—Measures in U.S./standard pounds and ounces.
 - Metric scale—Measures in grams, liters, and milliliters.
 - Types of scales used to weigh food
 - Portion scale—Measures individual portions of food to a precise weight.



• Baker's scale—Allows the baker to add an ingredient to the precise weight, reset the scale to zero, and then add another ingredient to its precise weight.



• Electronic scale—Item is placed on a scale and the weight digitally appears on the counter.



• Balance scale—Utilizes a series of individual weights that are manually added to count the weight of an object.



- Tips for weighing
 - Remove all packaging before weighing an item.
 - Scales containing both standard and metric measures are available for ease of measurement.
 - A cook should purchase a scale with a removable platform for easy sanitation.
 - Many scales will have a tare button, which is pressed to zero the weight out when an empty bowl is placed upon it.
 - If an item is to be weighed in a bowl or on a plate and there is no tare button, record the weight of the empty container, and weigh the bowl or plate first so it can be subtracted from the total combined weight.

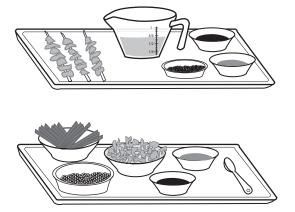
Sample volume-to-weight conversions
Whole-wheat flour: 1 cup = 4.5 ounces
Coarse whole-wheat flour: 1 cup = 4.25 ounces
Coarse cornmeal: 1 cup = 6 ounces
Rolled oats: 1 cup = 4 ounces
Table salt: 1 teaspoon = .25 ounces
Kosher salt: 1 ¾ teasoons = .25 ounces
Sea salt: 1 ½ teaspoons = .25 ounces
Instant yeast: 2 ½ teaspoons = .25 ounces (may be packaged as rapid-rise or fast-rising)
Active dry yeast: $2\frac{1}{2}$ teaspoons = .25 ounces
Granulated sugar, Baking powder, Baking soda: 2 tablespoons = 1 ounce, 1 cup = 7 ounces
Oil, Butter, Shortening, Milk, Water: 1 cup = 8 ounces
Eggs: 1 large egg = 1.65 ounces (without shell)

Estimating

- Is not an exact measure.
- The cook takes an educated guess regarding the amount of ingredient to use.
- Commonly used by experienced cooks.
- Estimation terms
 - Hint/Dash = $\frac{1}{8}$ t. or .02 fl. oz.
 - Pinch = $\frac{1}{16}$ t. or .01 fl. oz.
 - Smidgen = 1/32 t. or .005 fl. oz.
 - Drop = 1/144 t.
 - Handful = $\frac{1}{2}$ to 1 c.
- Using hand and fingers as an estimation tool
 - Fist = 1 c. fruit or a whole fruit
 - Thumb = 1 oz. meat or cheese
 - Fingertip = 1 t.
 - Tip of thumb = 1 T.
 - Cupped hand = 1 oz. dry food (cereal, pretzels, nuts, rice)

Mise en place

Mise en place (pronounced "meez ahn plahs")—French term that literally translates to "setting in place;" describes the preparation that is completed before beginning the actual cooking process.



- Indicates that the cook has all the ingredients needed for a dish prepared and ready to combine and then cook.
- Includes obtaining the proper cookware, flatware, and sauces.
- Beneficial because the cook does not have to stop the actual cooking process to prepare ingredients and assemble the kitchen.
- Saves time in the kitchen, as the process flows smoothly.
- Helpful for line cooks at stations in an industrial/commercial line kitchen.
- Typical mise en place process:
 - Re-read the recipe.
 - Check the kitchen for all ingredients, tools, and equipment required by the recipe.
 - Preheat the oven.
 - Wash and prepare ingredients.
 - Examples: Chop, slice, mince, marinate
- Place all ingredients in individual bowls.
- Prepare tools and equipment for use.

Examples: Oven mitts, spatulas, blenders, mixers

Procedures for organizing work and assembling supplies

- Develop a procedure for assembling supplies mise en place.
- Identify zones in the kitchen, or areas of major functionality based upon convenience and safety.
 - Washing area near the sink
 - Cutting area near the sink, knives, and hanging cutting board
 - Cooking area near the oven and burners, microwave, and convection ovens

- Storage zones should be strategically placed.
 - Pots and pans hanging or placed near the oven(s)
 - Dry food storage in the pantry away from water
 - Moist storage in the refrigerator/freezer near an electrical source
 - Cookware hanging or placed near the bowls and appliances
 - Appliances near electrical sources that are out of the way; saves counter space for food preparation
 - Diningware in an area away from the busy kitchen traffic and near the dining area
 - Cleaning supplies near the dishwashers and sinks
- Use FIFO (First In First Out).
 - Allows older foods to be used before their expiration date
 - Helps maintain fresher kitchen staples, as food is used before it has a chance to turn stale
 - Decreases the chance of freezer burn
- Coordinate the use of needed equipment.
 - With more than one cook in the kitchen, equipment can be at a premium.
 - Additionally, space constraints can hold up a cook needing to use a piece of equipment.
- Know and observe all safety and sanitation rules.
- Make sure your kitchen has a good workflow, so kitchen and wait staff are not running into each other.
- Be concerned about time management and allow yourself enough time to do the job correctly.
- Always use the correct equipment for the job.

Examples: Do not shortcut and use a dish towel for hot pads or a plate to tenderize meat.

Guidelines for timing food preparation

- Some restaurants plate food all at once, and others serve food in courses.
- All food should be prepared Just-In-Time (JIT).
 - If serving courses, it can be a juggling act for the cook to have food prepared and ready to serve at the correct time and in the correct sequence.
 - If plating all food at the same time, it can be daunting for the cook to have hot foods hot, cold foods cold, and all ready to serve at the same time.
 - All food should be ready to be plated and served at the same time.

- The cook doesn't want food sitting around at an improper temperature, or foodborne illness can occur.
- Hot foods should be served hot and cold foods should be served cold.
- Refrigerators and heat lamps temporarily help food retain proper temperature, but they can also overcook the food.
- Tips for timing
 - Know how long it takes to make all the foods in your menu.
 - Every time a new dish is made or created, document the time it takes on the recipe card.
 - Practice mise en place.
 - Have all prep work done early.
 - Examples: Cutting, washing, pre-heating, sanitizing, and setting out pans
 - Make sure the workstation is set up neatly and organized.
 - Be open to new ideas to make your work run more effectively and efficiently.
 - Accidents often happen when people are in a hurry in a crowded kitchen.
 - Be aware of other people in the kitchen and their whereabouts.
 - Avoid becoming distracted by others in the kitchen area.
 - Wear a comfortable, safe work uniform and rubber-soled shoes to avoid burns and slips.
 - Always practice safety, as there are many hidden dangers in a kitchen.

Example: Hitting wait staff holding a tray full of plated food with a swinging door

- When menu planning, try to plan a course or two that can be made a day or two early and then refrigerated/frozen/heated up with no effect on the food flavor.
- Consider dishes that do not require precise cooking times, and use this leeway to prepare other items or as a buffer should things not go as planned.
- Use thermometers when cooking meat for safety, sanitation, and proper temperature, as oven temperatures often vary.
- Some foods can be kept warm after completion and do not need to be served immediately; use these items as "stand-by" dishes so time can be spent working on the food items that must be more precise.
- Defrosted foods have special requirements.
 - Should be given adequate time to thaw out in a refrigerator.
 - Only thaw out frozen items in the microwave oven if they will be cooked immediately.
 - Some food items don't freeze well.

Example: The frost that develops on a dish adds extra water to the prepared dish, making it too "soupy."

Common Substitutes

- 1 teaspoon baking powder = ¹/₄ teaspoon baking soda plus ¹/₂ cup buttermilk or ¹/₄ teaspoon baking soda plus ⁵/₈ teaspoon cream of tartar
- 1 cup sifted cake flour = $\frac{7}{8}$ cup sifted all-purpose flour or 1 cup all-purpose flour minus 1–2 tablespoons
- 1 cup self-rising flour = 1 cup sifted all-purpose flour plus 1 $\frac{1}{2}$ teaspoons baking powder and $\frac{1}{2}$ teaspoon salt
- 1 cup all-purpose flour = 1 cup whole wheat flour
- 1 cup honey = 1 to 1 $\frac{1}{4}$ cups sugar plus $\frac{1}{4}$ cup liquid
- 2 large eggs = 3 small eggs
- 1 medium egg = 2 egg yolks plus 1 tablespoon water (for baking)
- 1 medium egg = 2 egg yolks (in custards or cream fillings)
- 1 ounce unsweetened chocolate = 1 square or 3 tablespoons unsweetened cocoa powder plus 1 tablespoon butter or margarine
- 6 squares or 6 ounces semisweet chocolate, melted = 1 cup semisweet chocolate chips, melted
- 1 tablespoon cornstarch (as thickening) = 2 tablespoons flour or 2 teaspoons quick tapioca or 2 egg yolks
- 1 teaspoon lemon juice = $\frac{1}{2}$ teaspoon vinegar
- 1 tablespoon fresh herbs = $\frac{1}{2}$ to 1 teaspoon dried herbs
- 1 small garlic clove = $\frac{1}{8}$ teaspoon garlic powder
- 1 pound fresh mushrooms = 3 ounces dried or 6 ounces canned
- 1 cup whipping cream, whipped = 2 cups thawed whipped topping
- 1 cup whipping cream as liquid = $\frac{1}{3}$ cup melted butter plus $\frac{3}{4}$ cup milk
- 1 cup light cream = 3 tablespoons melted butter plus ³/₄ cup milk
- 1 cup ricotta cheese = 1 cup cottage cheese, liquid drained
- 1 cup buttermilk = 1 cup plain yogurt, stirred, or 1 tablespoon lemon juice stirred into milk to make 1 cup; let stand 5 minutes to make soured milk for baking only (never use sour milk that's been in the fridge too long; it's actually spoiled)
- 1 cup whole milk = 2 teaspoons melted butter plus 1 cup fat-free milk (or water) or equal parts evaporated milk and water or 1 cup nonfat dry milk plus 2 teaspoons melted butter
- 1 cup sour cream = 3 tablespoons melted butter stirred into 7/8 cup buttermilk, soured milk or plain yogurt
- 1 cup sour cream = 1 cup plain yogurt (but it will taste less rich from the missing fat)
- Pecans = walnuts, almonds or hazelnuts

- Chunky peanut butter = creamy peanut butter (or grind roasted peanuts in a blender with a little peanut oil)
- 1 cup bread crumbs = $\frac{3}{4}$ cup cracker crumbs
- 1 cup butter = 1 cup margarine or ⁷/₈ cup vegetable oil or ⁷/₈ cup butter-flavored shortening
- 1 pound lard = 2 cups shortening
- 1 cup sugar (in baking bread) = 1 cup honey plus a pinch of baking soda
- 1 cup sugar (in baking) = $\frac{7}{8}$ cup honey plus a pinch of baking soda
- 1 cup sugar (in main dishes) = $\frac{3}{4}$ cup honey
- 1 cup brown sugar = 1 cup white sugar plus 2 tablespoons molasses
- 1 cup molasses (in baking) = 1 cup sugar (omit baking soda; use baking powder)
- \cdot 1/2 cup dry red wine or white wine = 2 tablespoons sherry or port
- ³/₄ cup maple syrup = ³/₄ cup maple-flavored syrup, corn syrup or 1 cup sugar and increase liquid in recipe by 3 tablespoons
- 1 teaspoon pumpkin pie spice = $\frac{1}{4}$ teaspoon nutmeg, $\frac{1}{4}$ teaspoon ginger, $\frac{1}{2}$ teaspoon cinnamon
- 1 pound tomatoes = 3 medium or $\frac{3}{4}$ cup sauce (6 ounces) or $\frac{1}{4}$ cup paste (2 ounces)
- 8 ounces tomato sauce = $\frac{2}{3}$ cup water plus $\frac{1}{3}$ cup tomato paste
- 3 cups tomato juice = $2\frac{1}{2}$ cups water plus 6 ounces tomato paste plus $\frac{3}{4}$ teaspoon salt, dash of sugar
- 1 large marshmallow = 10 mini marshmallows (dust off cornstarch from their surfaces or it might overload a recipe)
- 1 cup granulated sugar = 1 ³/₄ cups powdered sugar for uses other than baking
- 1/4 teaspoon powdered ginger = 1 teaspoon chopped fresh or 2 teaspoon minced crystallized ginger
- 1 head fresh dill = 2 teaspoons dill seed
- 1 tablespoon grated fresh horseradish = 2 tablespoons bottled
- 1 teaspoon lemon juice = $\frac{1}{2}$ teaspoon vinegar
- 1 teaspoon dry mustard = 1 tablespoon prepared mustard or ½ teaspoon mustard seeds
- \cdot ¹/₄ cup rum = 1 teaspoon rum extract plus liquid to make ¹/₄ cup
- 1 teaspoon vanilla extract = 1 inch vanilla bean, split and simmered in liquid of recipe
- 1 cup wine = 13 tablespoons water, 3 tablespoons lemon juice and 1 tablespoon sugar or a little less than 1 cup apple juice plus lemon juice
- 1 cup dry bread crumbs = 3 to 4 slices bread, torn and blended in a blender

- 1 cup sweetened condensed milk = 1 cup plus 2 tablespoons dry milk powder plus $\frac{1}{2}$ cup warm water plus $\frac{3}{4}$ cup sugar and dissolve
- One half teaspoon cream of tartar = $1 \frac{1}{2}$ teaspoons lemon juice or vinegar
- 1 tablespoon maple sugar = 1 tablespoon granulated sugar plus a dash of maple extract



Assignment

Write a Standard Recipe

Name	Overall Rating
Date	

Directions Sweet potato pie is a traditional dessert popular in the Southern United States. It is customarily baked in an open pie shell and is similar to pumpkin pie in taste, appearance and consistency. The shell is a basic pie crust made of flour, shortening and salt. The filling consists of puréed sweet potatoes, milk, sugar and eggs, flavored with a variety of spices such as cinnamon and nutmeg. (Regional variations of this recipe abound; recipes differ substantially in the unique flavoring ingredients used to complement the sweet potato).

Based on the description above, complete the required fields of the following standard recipe card.

Note: Do not worry about cost information for this assignment.

Recipe Name: Yield: Date: Costed:	Recipe Number: Food Category:			
Ingredients	Amount	Unit Cost	Multiplier	Total Cost
Procedures:				
Portion Size:				

Locate and print at least three sweet potato pie recipes from the Internet or cookbooks. Evaluate your recipe using these resources and answer the following questions.

1. What was left out? ______

2. What was inaccurate? ______

3. What are the advantages of using a standardized recipe? List three examples:

a	
b	
c.	

4. What would the consequences of these omissions and inaccuracies have been if you had prepared the dish according to your "scratch" recipe?

Correct your recipe using your knowledge of standard recipes and the examples you have provided. Make sure that the recipe card conforms to the standard recipe format described in the previous information.

Recipe Name: Yield: Date: Costed:	Recipe Number: Food Category:			
Ingredients	Amount	Unit Cost	Multiplier	Total Cost
Procedures:	1	I	I	L
Portion Size:				

Assignment

Complete a Standard Requisition for a Recipe

Name _____ Overall Rating _____

Date _____

Directions You are the chef, and the name of your work station is PREP. You are going to use the recipe below to prepare coleslaw on March 17. When you check the recipe ingredients, you find that you have the sugar, salt, white pepper, and vinegar at your work station, but everything else must come from the storeroom. Fill out the requisition on the next page for the items you will need and answer the questions that follow.

Coleslaw			
Yield: 25 portions			
Ingredients	Amount		
Mayonnaise	1 1/2 pt.		
Vinegar	2 oz.		
Sugar (optional)	1 oz.		
Salt	2 tsp.		
White pepper	1/2 tsp.		
Cabbage, shredded	4 lb. EP		
Lettuce cups for underliners	25		
until smooth.Add the cabbage and mix well.Taste and, if necessary, add more sArrange the lettuce leaves on cold	5		

1. Using the following form, complete a requisition for the recipe. Be sure to fill in all fields accurately and completely.



Ship to —

Item No.	Quantity	Description

Authorized Signature

2. What is the purpose of a requisition?

3. How is a requisition different from a purchase order?_____

Assignment

Convert Weights and Measures Using a Conversion Table

	Name	O	verall Rati	ing
	Date			
Directions	•	•		mation on the next page. Convert answers I be used to evaluate your performance.
	When converting weights and measure the desired weight or measure.	es, multiply both	sides of th	ne table by the number required to obtain
	Examples:	1 oz. of ingredie	ent = 2 T.	
		If the recipe call	ls for 3 ou	nces, multiply both sides by 3.
		1 oz. 3 x 1 oz. 3 oz.	=	3 x 2 T. 6 T.
		If the recipe calls for 8 T., multiply both sides by 4.		multiply both sides by 4.
		1 oz. 4 x 1 oz. 4 oz.	=	4 x 2 T.

If the recipe calls for 1 T., multiply both sides by 1/2.

1 oz.	=	2 T.
¹ /2 x 1 oz.	=	¹ /2 x 2 T.
¹ /2 oz.	=	1 T.

Conversion Table				
Food Item	Weight	Measure		
Baking soda	6 oz.	1 cup		
Cornmeal	1 lb. 5 oz.	1 quart		
Milk	2 lb.	1 pint		
Mustard	8 oz.	1 pint		
Rolled oats	3 oz.	1 cup		
Pickle relish	10 ½ oz.	1 pint		
Vinegar	1 lb.	1 pint		

1.	Convert the following weights to measures.
	a. 2 lb. 10 oz. of cornmeal =
	b. 32 oz. of mustard =
	c. 12 oz. of rolled oats =
2.	Convert the following measures to weights.
	a. 3 cups of baking soda =
	b. 1 ¹ /2 pints of milk =
	c. 3 pints of pickle relish =
	d. 1 quart of vinegar =



Assi	anı	nent

Compare Accuracy of Methods of Measuring

	Na	ame	Overall Rating
	Da	ate	
Directions	the		nts must be followed to ensure the success of the recipe. If s can result. Do the following comparisons and answer the used to evaluate your performance.
	1.	5 , 1	he measuring cup by spoonfuls, then leveled with a ethod, then weigh one cup of flour dipped from the bin or
		a. Weight of sifted flour	
		b. Weight of dipped flour	
		c. Which weighs the most?	
		d. What difference do you think this would n	nake in a recipe?
	2.	Brown sugar should be firmly packed so that	it holds its shape when turned out of a cup. Weigh one cup f brown sugar poured loosely into a cup without packing.
		a. Weight of firmly packed brown sugar	
		b. Weight of loosely poured brown sugar	
		c. Which weighs the most?	
		d. What difference do you think this would n	nake in a recipe?
			11/2 TSP

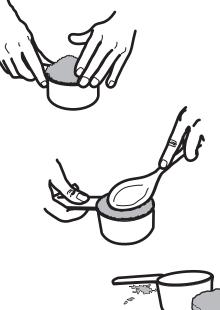


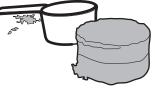
Assi	an	m	ent	
	J			

		Weigh and Measure Dry Ingredients
Na	ame	Overall Rating
Da	ate	
	We	eigh a Dry Ingredient Using Baker's Scales
Instructions		nen you are ready to perform this task, ask your instructor to observe the procedure and rate ur performance using the evaluation criteria.
Tools, Equipment, and Materials	•	Baker's scale Flour or sugar Large volume dry measure Spoon
Procedure	1.	Place the scoop on the left side of the baker's scale and the counterbalance on the right side of the scale.
	2.	Set the ounce weight on zero; the scales should then be in balance.
	3.	Fill the large volume dry measure with flour or sugar.
	4.	Set the scales at desired weight of ingredient by placing weights on the counterbalance and moving the ounce weight until desired amount is reached.
		Note: The scales will no longer balance.
	5.	Pour flour or sugar from the dry measure into the scoop until the scales are balanced.
		Note: If too much of the dry ingredient is poured, the left side will be lower than the right; if too little is poured, the right side will be lower.
	6.	Remove or add small amounts of the dry ingredient with a spoon until the scales are perfectly balanced.
	7.	Repeat the procedure with different weights.
	8.	Have instructor evaluate your work.
	9.	Clean the tools and equipment and return them to proper storage.
	10.	Clean the work area.

	Measure Dry Ingredients
Instructions	When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.
Tools, Equipment, and Materials	 White rice (5 lb. bag) All-purpose flour (5 lb. bag) Brown sugar (2 lb. bag) Salt (1 lb. carton) Nested dry measuring cup set (¹/4 cup to 1 cup sizes) Nested measuring spoon set (¹/8 to 1 T. sizes) Spoon Butter knife (straight edge)
Procedure	1. Spoon and sweep flour.
	Fluff up the flour bag.
	• Lightly spoon 2 ¹ / ₂ cups of all-purpose flour into a measuring cup.
	Level off with a butter knife or other straight edge.
	2. Scoop and sweep white rice.
	Dip measuring cup into the bag or container of white rice.
	• Scoop up 4 ¹ / ₂ cups of white rice.
	Level off with a butter knife or other straight edge.
	3. Scoop and sweep brown sugar.
	Dip measuring tool into the bag or container of brown sugar.
	 Scoop up 1¹/4 cups of brown sugar.
	• Pack brown sugar into the measuring cup firmly with a spatula, spoon, or hand.
	 Rescoop brown sugar and pack again until as much ingredient is pressed into the cup as possible.
	• Level off with a butter knife or other straight edge at the rim of the cup.

Note: When leveling, do it over a separate bowl or sink (not the mixing bowl) to avoid getting too much ingredient into the recipe.





- 4. Measure salt.
 - Pour ³/₄ t. salt directly into the measuring spoon.

Note: Pour salt over the sink or separate bowl — NOT the mixing bowl.

- Level off with a butter knife or other straight edge.
- 5. Have instructor evaluate your work.
- 6. Clean the tools and equipment and return them to proper storage.
- 7. Clean the work area.

E	valuation Criteria	Rating
•	Selected proper measuring tools Scale properly set for desired weight of ingredient Ingredient in scoop perfectly balanced with set	
•	amount of weight Measured ingredients accurately Packed/leveled ingredients properly, according to specification	

Evaluator's Comments: _____



Assignment

Weiah	and	Measure	l iauid	Ingredients	c
Vergn	unu	meusure	LIYUIU	ingiculent.	

Na	ame Overall Rating
Da	ate
	Weigh a Liquid Ingredient Using Portion Scales
Instructions	When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.
Tools, Equipment, and Materials	 Portion scale Water Large volume liquid measure 1-pint measuring cup Mixing bowl
Procedure	1. Fill large volume liquid measure with water.
	2. Place the mixing bowl on the scale platform.
	3. Adjust the dial on the scales so that zero is aligned with the pointer.
	Note: This allows the scales to record the weight of the contents without the additional weight of the container.



4. Pour water into the mixing bowl until desired weight is indicated by the pointer.

Note: For this exercise, use 12 ounces.

- 5. Set aside mixing bowl of water.
- 6. Repeat the procedure using the one-pint measuring cup and the same weight of water.
- 7. Compare the amount of water in the measuring cup with that in the bowl.

	Note: Observe the level of water in the measuring cup, then pour it out and refill with the water in the mixing bowl. There should be an equal amount of water even though very different kinds of containers were used.
	8. Have instructor evaluate your work.
	9. Clean the tools and equipment and return them to proper storage.
	10. Clean the work area.
	Measure a Liquid Ingredient
Instructions	When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.
Tools, Equipment, and Materials	 Water (1 gallon) Cooking oil (1 quart) Honey (1 pint) Liquid measuring glasses (3) Nested measuring spoons (¹/₈ t. to 1T. sizes)
Procedure	1. Measure different amounts of water.
	Set graduated measuring glasses on a flat surface.
	• Pour the following amounts of water into separate graduated measuring glasses.
	• 9 fl. oz. of water
	2 liters of water
	• 2 ¹ / ₂ pints of water
	Read measurements at eye level to ensure the proper measures.
	Have instructor evaluate your measurements.
	2. Measure cooking oil.
	Set measuring glass on a flat surface.
	• Pour 1 ¹ / ₈ cup cooking oil into measuring glass.
	Read measurement at eye level to ensure the proper measure.
	3. Measure honey.
	 Spray measuring spoon with cooking oil before putting the honey in so it will easily slip from the measuring spoon.
	• Pour ³ / ₄ T. honey into the measuring spoon.
	4. Have instructor evaluate your work.

- 5. Clean the tools and equipment and return them to proper storage.
- 6. Clean the work area.

Evaluation Criteria	Rating
Selected proper measuring toolsAccurate weight of water achieved using different	
types of containers	
 Measured ingredients accurately Followed proper measuring procedures 	
Followed proper measuring procedures	

Evaluator's Comments: _____



Assignment

Read and Follow a Standard Recipe				
	Name	Overall Rating		
	Date			
Instructions	When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.			
Tools, Equipment, and Materials	 Nested measuring cups Nested measuring spoons Measuring glass (4 cup) Mixing bowl Cutting board Chef's knife Mixing spoon 			
Procedure	1. Study the following recipe.			
	Spicy Brown Ric	e Salad		
	 ¹/2 c. Italian salad dressing 1 tsp. pepper sauce 2 tsp. brown and spicy mustard 2 c. chopped pecans ¹/3 c. chopped green onion ¹/4 c. sliced green olives ¹/3 c. fresh parsley, chopped ¹/4 c. dill pickle relish 			
	Combine salad dressing with pepper sauce as with remaining ingredients. Spoon salad dress Chill. Serves 6.			

2. Increase yield of recipe from 6 servings to 15 servings.

Note: To increase the yield, multiply each quantity by 15/6, or 2.5.

Ingredient	6 Servings	Multiplier	15 Servings
Brown rice	2 c.	2.5	10 cups
Italian salad dressing	¹ /2 C.	2.5	
Pepper sauce	1 tsp.	2.5	
Brown and spicy mustard	2 tsp.	2.5	
Chopped pecans	2 c.	2.5	
Chopped green onion	¹ /3 C.	2.5	
Sliced green olives	¹ /4 C.	2.5	
Fresh parsley	¹ /3 C.	2.5	
Dill pickle relish	¹ /4 C.	2.5	

- 3. Prepare recipe as follows:
 - Prepare brown rice according to package directions.
 - Refrigerate prepared rice until chilled.
 - Combine salad dressing, pepper sauce and mustard.
 - Blend wet ingredients thoroughly.
 - Add pecans, green onion, olives, parsley and relish to chilled rice.
 - Mix thoroughly.
 - Spoon salad dressing over salad.
 - Toss salad until thoroughly coated.
 - Refrigerate until ready to serve.
 - Have instructor evaluate your work.
 - Return tools and materials to proper storage.
 - Clean the work area.

Evaluation Criteria	Rating
Measured ingredients accurately	
Adjusted recipe yield properly	
Followed proper measuring procedure	

Evaluator's Comments: _____