Skills for Success Curriculum Resource Cover Page

Organization

College Sector Committee for Adult Upgrading (CSC)

Curriculum Resource

Food Services Preparation Module 3 - Basic Recipe Costing and Food Cost Percentage Pricing

This module is the third in a five-part series. It can be used to support learners in LBS and/or pre-apprenticeship who are interested in food service/cooking. In this module, participants will learn how to determine the cost of recipes using a calculator and Microsoft Excel. They will also learn how to calculate the menu price per portion of a recipe based on a given food cost. An additional activity includes contacting a wholesale food distributor and placing a "mock order". Familiarity with Excel at an introductory level is recommended. Answer keys for practice activities are provided.

OALCF Alignment

Competency	Task Group	Level
Competency A -Find and Use Information	A1. Read continuous text	3
Competency B - Communicate Ideas and Information	B1. Interact with others	2
Competency B - Communicate Ideas and Information	B2. Write continuous text	2
Competency B - Communicate Ideas and Information	B3. Complete and create documents	2
Competency C - Understand and Use Numbers	C1. Manage money	2
Competency C - Understand and Use Numbers	C3. Use measures	3
Competency D - Use Digital Technology	N/A	2

Goal Paths (check all that apply)

☒ Employment
☒ Apprenticeship
☐ Secondary School Credit
☒ Postsecondary
☒ Independence

Embedded Skills for Success (check all that apply)

☒ Adaptability
☒ Collaboration
☒ Communication
☒ Creativity and innovation
☒ Digital
☒ Numeracy
☒ Problem Solving
☒ Reading
☒ Writing

Notes:
This resource can be used in a teacher-led or self-directed format.
Note that fonts used in the equation editor differ from the rest of the text
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Table of Contents

Introduction

This resource is the third module of a five-part series pertaining to the basic theory and calculations used in the kitchens of food service establishments, such as restaurants, cafeterias, and food trucks. For cooks, managers, and owners alike, a thorough understanding and the proficient application of these fundamental principles is essential to one's job description as well as to the proper functioning and economic survival of any food service establishment.

In this module, learners will be introduced to the concept of costing, including recipe costing, portion costing, and food cost percentage menu pricing. Learners will utilize their new knowledge to practice costing and pricing using a calculator and Excel. As well, an additional activity includes contacting a wholesale food provider and placing a mock order.

The content of this module is covered in the following order:

1. recipe costing, costing per portion, and food cost percentage menu pricing using a calculator
2. recipe costing, costing per portion, and food cost percentage menu pricing using Microsoft Excel
3. summary
4. appendices

The first two chapters provide learners with theory and examples pertaining to recipe costing and menu pricing followed by problem sets with answers. Learners are expected to apply their knowledge from the first and second modules on measurement conversion, recipe scaling, and yield factors to understand the new theory and solve the problem sets. The second chapter also includes an activity in which the learner places a mock order with a local wholesale food supplier.

The appendices are organized as follows:

- Appendix A is intended for use as a quick reference sheet; it contains measurement conversion factors and formulas required to complete the module.
- Appendix B contains the as purchased costs, number of units, and unit quantities of all food items in the example and problem set recipes.
- Appendix C contains the yield factors for all the food items in Appendix B
- D contains the necessary unit of measurement abbreviations to use with Excel's convert function.

If at any time a learner encounters difficulties with the content of this resource, the instructor can provide assistance.

Acknowledgement

The *College Sector Committee for Adult Upgrading* would like to thank Professor Christopher Prechotko (Cambrian College) for researching and authoring this resource for use by Literacy and Basic Skills/Academic Upgrading programs across Ontario.

Chapter 1 – Costing Recipes with a Calculator

Costing recipes is an important skill to learn for any person who would like to manage a kitchen or own a food service establishment. Recipe costing reveals how much money it costs to produce a given yield of food for a particular recipe. Without this knowledge, over time, food service establishments will more than likely encounter financial difficulties.

In this chapter you'll learn seven concepts listed below:

A. Describe **as purchased cost**.
B. Calculate the **cost per unit** from the as purchased cost.
C. Calculate the **edible portion cost** from the cost per unit.
D. Calculate the **cost of a recipe ingredient.**
E. Combine the previous concepts in order to find the **total cost of a recipe**.
F. Calculate the **cost per portion** from the fully costed recipe.
G. Determine the **menu price of a portion** based on a set food cost percentage.

First, we'll describe the first four concepts listed above, before you learn how to cost a recipe.

A. As Purchased (AP) Cost

The *as purchased cost* of a food item is the cost of a given quantity of the food item when purchased from a food distributor or purveyor (Labensky et al., 2006). The as purchased cost can be found on a price quote, purchase order, or invoice. Price quotes, purchase orders, and invoices list the as purchased cost of a food item as well as the number of units in a package and the quantity of each unit, in weight, volume, or count.

In other words, when food items are ordered from a supplier, they are often not sold as single items. Instead, food items are packaged and sold in larger quantities (known as bulk), such as by case, by box, by flat, by crate or per bag. Each of these packaging

options will have more than one unit of a particular food item inside, such as more than one can of tomatoes or container of raspberries.

Furthermore, each unit will have a given quantity by weight, volume, or count. For example, a can of tomatoes or container of raspberries will have a given quantity of volume or weight. A case of canned tomatoes may have six cans per case, and each can may have a volume of 2.84 litres, while a flat of raspberries may have twelve containers, and each container may weigh 6 ounces. Additionally, some food items are sold by count, like eggs which are commonly sold by the dozen.

For the previously mentioned case of canned tomatoes, a supplier may provide a price quote in the format seen in the example below.

Example 1A: As Purchased Cost, Number of Units, and Unit Quantity – Quote for a Can of Tomatoes

Figure 1.

Quote for a Case of Canned Tomatoes

Product No	Quantity	Unit	Description	Pack/Size	PST	GST	Price
439216	1	CA	STANIS TOMATO PLUM WHOLE ALTA CUCINA	6/2.84LT			53.95

In Figure 1, you can see the following:

- The supplier's product number is listed in the first column of the quote. Suppliers will assign each of the food items they sell a product number.
- The second and third columns contain the total quantity to be bought from a supplier. In this example, one case (1 CA) is listed; note that the quantity of units in a case can differ between food items and suppliers.
- The fourth column provides a description of the item: Alta Cucina brand plum tomatoes produced by the company Stanislaus.
- The fifth column lists the number of smaller units packed in the case along with the quantity (size) of each unit. In this example, a case contains 6 cans; a can has a volume of 2.84 litres.
- The sixth column would provide the taxes charged on the item if the item was actually purchased rather than quoted.
- The last column provides the as purchased cost of the food item. In this example, 1 case of canned tomatoes costs $53.95.

Example 1B: As Purchased Cost, Number of Units, and Unit Quantity – Quote for a Bag of Potatoes

As another example, the quote for a bag (1 BG) of number 1 (NO1) large Poulin potatoes is seen in Figure 2. 1 bag costs $21.50. Each bag contains approximately 50 potatoes at a weight of 1 pound (LB) each; this bag weighs 50 pounds in total.

Figure 2.

Quote for a Bag of Potatoes

Product No	Quantity	Unit		Description	Pack/Size	PST GST	Price
282526	1	BG	NO1	POTATOES - LARGE - POULIN	50/1LB		21.50

At this point in your learning journey, you're not expected to know how to read a quote, purchase order, or invoice; you'll learn this skill on the job. However, in this resource, you'll use the 'as purchased costs' along with the number of units and quantity of each unit (unit quantity) extracted from a wholesale supplier quote to determine the cost per unit of various food items.

Appendix B contains this information, already extracted for you, for all the food items in the recipes that you'll eventually cost in the problem sets. Now, let's learn how to calculate the cost per unit.

B. Cost Per Unit

Before we can calculate the edible portion cost, we must calculate the *cost per unit*. To calculate the cost per unit, we divide the as purchased cost by the product of the number of units and unit quantity:

$$Cost\ Per\ Unit = \frac{As\ Purchased\ Cost}{Number\ of\ Units\ x\ Unit\ Quantity}$$

Example 1C: Calculating Cost Per Unit

Let's calculate the cost per unit of the case of canned tomatoes from a previous example above. If a case of canned tomatoes, containing 6 cans at 2.84 L each, costs $53.95, what is the cost per unit?

As Purchased Cost = $53.95

Number of Units = 6

Unit Quantity = 2.84 L

$$Cost\ Per\ Unit = \frac{As\ Purchased\ Cost}{Number\ of\ Units\ x\ Unit\ Quantity}$$

$$Cost\ Per\ Unit = \frac{\$53.95}{6\ x\ 2.84\ L}$$

$$Cost\ Per\ Unit = \$3.17/L\ (rounded\ to\ the\ nearest\ cent)$$

Thus, the cost per unit is $3.17/L. In other words, it costs $3.17 for every litre of canned tomatoes. For costing purposes in most Canadian kitchens, recipe ingredients are typically listed in metric units of measurement. Consequently, we want to ensure that the respective as purchased costs are represented in similar metric units of weight or volume. For the last example, we don't have to convert the cost per unit to metric because the quantity per can of tomatoes is already in metric units, litres.

C. Edible Portion (EP) Cost

After the cost per unit is calculated, we can now calculate the *edible portion cost*. If there isn't any trim loss (waste) from processing the food item, the edible portion cost will have the same dollar value as the cost per unit. However, if there is trim loss, the edible portion cost will have a higher dollar value than the cost per unit. We discussed this briefly in the second module on recipe scaling and yield factors.

To determine the edible portion cost, we must divide the cost per unit by the yield factor for a particular item. If the yield factor is 1, there isn't any trim loss, and the edible portion cost is the same dollar value as the cost per unit. If the yield factor is less than 1, there is some trim loss, so the edible portion cost will be higher dollar value than the cost per unit. Below is the formula for edible portion cost:

$$Edible\ Portion\ (EP)\ Cost = \frac{Cost\ Per\ Unit}{Yield\ Factor}$$

Example 1D: Calculating Edible Portion (EP) Cost

What is the edible portion cost for the case of canned tomatoes? For the case of canned tomatoes, we can consider the yield factor to be 1, unless the recipe calls for the seeds to be strained:

Cost Per Unit = $3.17/L

Yield Factor = 1

$$Edible\ Portion\ (EP)\ Cost = \frac{Cost\ Per\ Unit}{Yield\ Factor}$$

$$Edible\ Portion\ (EP)\ Cost = \frac{\$3.17/L}{1}$$

$$Edible\ Portion\ (EP)\ Cost = \$3.17/L$$

Thus, the edible portion cost is the same dollar value as the cost per portion because there isn't any waste in this instance when the can of tomatoes is processed.

D. Ingredient Cost

Once the edible portion cost of a recipe item is known and the quantity of the ingredient called for in the recipe is known, the cost of an ingredient can be calculated. To calculate the *ingredient cost*, the quantity of ingredient is multiplied by the edible portion cost:

$$Ingredient\ Cost = Quantity\ of\ Ingredient\ x\ Edible\ Portion\ (EP)\ Cost$$

Example 1E: Calculating Ingredient Cost

For the same case of canned tomatoes seen in previous examples, we'll now calculate the cost required for a recipe. If 2.5 L of canned tomatoes is required for a recipe, how much does this ingredient cost?

Quantity of Recipe Ingredient = 2.5 L

Edible Portion Cost = $3.17/L

$$Ingredient\ Cost = Quantity\ of\ Ingredient\ x\ Edible\ Portion\ (EP)\ Cost$$

$$Ingredient\ Cost = 2.5\ L\ x\ \$3.17/L$$

$$Ingredient\ Cost = \$7.93\ (rounded\ to\ the\ nearest\ cent)$$

Thus, 2.5 L of canned tomatoes costs $7.93.

E. Total Recipe Cost

To calculate the cost of an entire recipe or the *total recipe cost*, the costs of all recipe ingredients must be calculated and added together (summed).

$$Total\ Recipe\ Cost = Ingredient\ Cost\ 1 +\ Ingredient\ Cost\ 2 + \cdots + Last\ Ingredient\ Cost$$

This is best done with a *costing table*.

The column headings of the table are Ingredient, Ingredient Quantity, As Purchased (AP) Cost, Number of Units, Unit Quantity, Cost Per Unit, Yield Factor, Edible Portion (EP) Cost, and Ingredient Cost. Example 1F provides a visual of an effective costing table.

Example 1F: Sample Recipe Costing Table

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
							Total Recipe Cost	

Now let's apply the principles we have learned so far to calculate the cost of a recipe.

Example 1G: Recipe Costing with a Calculator

Using the information in Appendices A, B, and C, we'll cost the recipe below.

Recipe - Cream of Tomato Soup (Portions = 8, Portion Size = 250 mL)

Ingredients	Ingredient Quantity
Canned Tomatoes	1.5 L
Onion	142 g
Unsalted Butter	85 g
Garlic	14 g
Heavy Cream	240 mL
Salt	10 g
Basil	25 g

***Step 1*:** Draw a costing table like the example costing table above.

Step 2: Enter the ingredients and their quantities into the table.

Step 3: Use Appendix B to find and then enter the as purchased costs, number of units and unit quantity for each ingredient into the table. Use Appendix C to find the yield factors for all ingredients and then enter the yield factors into the table.

Recipe - Cream of Tomato Soup (Portions = 8, Portion Size = 250 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Canned Tomatoes	1.5 L	$45.16	6	2.84 L		1		
Onion	142 g	$33.66	50	1 lb		0.90		
Unsalted Butter	85 g	$305.26	40	454 g		1		
Garlic	14 g	$10.00	1	3 lb		0.87		
Heavy Cream	240 mL	$98.77	12	1 L		1		
Iodized Salt	10 g	$40.30	24	1 kg		1		
Basil	25 g	$8.22	4	25 g		0.56		
							Total Recipe Cost	

Step 4: Calculate the cost per unit for each ingredient by dividing the as purchased cost by the product of the number of units and unit quantity.

$$Cost\ Per\ Unit = \frac{As\ Purchased\ Cost}{Number\ of\ Units\ x\ Unit\ Quantity}$$

Ensure that the cost per unit is in the same metric unit as the recipe ingredient. This means that you may have to convert unit quantities to metric before calculating the cost per unit. *For this example, costs per unit are rounded to 5 decimal places when necessary.*

Recipe - Cream of Tomato Soup (Portions = 8, Portion Size = 250 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Canned Tomatoes	1.5 L	$45.16	6	2.84 L	$2.65/L	1		
Onion	142 g	$33.66	50	1 lb	$0.00148/g	0.90		
Unsalted Butter	85 g	$305.26	40	454 g	$0.01681/g	1		
Garlic	14 g	$10.00	1	3 lb	$0.00734/g	0.87		
Heavy Cream	240 mL	$98.77	12	1 L	$0.00823/mL	1		
Salt	10 g	$40.30	24	1 kg	$0.00168/g	1		
Basil	25 g	$8.22	4	25 g	$0.0822/g	0.56		
							Total Recipe Cost	

Step 5: For each ingredient, divide the cost per unit by the yield factor to calculate the edible portion cost. *Round edible portion costs to five decimal places when necessary.*

$$Edible\ Portion\ Cost = \frac{Cost\ Per\ Unit}{Yield\ Factor}$$

Recipe - Cream of Tomato Soup (Portions = 8, Portion Size = 250 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Canned Tomatoes	1.5 L	$45.16	6	2.84 L	$2.65/L	1	$2.65/ L	
Onion	142 g	$33.66	50	1 lb	$0.00148/g	0.90	$0.00164/g	
Unsalted Butter	85 g	$305.26	40	454 g	$0.01681/g	1	$0.01681/g	
Garlic	14 g	$10.00	1	3 lb	$0.00734/g	0.87	$0.00844/g	
Heavy Cream	240 mL	$98.77	12	1 L	$0.00823/mL	1	$0.00823/mL	
Salt	10 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	
Basil	25 g	$8.22	4	25 g	$0.0822/g	0.56	$0.14679/g	
							Total Recipe Cost	

Step 6: Multiply the ingredient quantity by the edible portion cost to determine the cost for each ingredient. *Round ingredient costs to the nearest cent.*

$$Ingredient\ Cost = Quantity\ of\ Ingredient\ x\ Edible\ Portion\ Cost$$

Recipe - Cream of Tomato Soup (Portions = 8, Portion Size = 250 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Canned Tomatoes	1.5 L	$45.16	6	2.84 L	$2.65/L	1	$2.65/L	$3.98
Onion	142 g	$33.66	50	1 lb	$0.00148/g	0.90	$0.00164/g	$0.23
Unsalted Butter	85 g	$305.26	40	454 g	$0.01681/g	1	$0.01681/g	$1.43
Garlic	14 g	$10.00	1	3 lb	$0.00734/g	0.87	$0.00844/g	$0.12
Heavy Cream	240 mL	$98.77	12	1 L	$0.00823/mL	1	$0.00823/mL	$1.98
Salt	10 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	$0.02
Basil	25 g	$8.22	4	25 g	$0.0822/g	0.56	$0.14679/g	$3.67
							Total Recipe Cost	

Step 7: For the last step, sum (add) all the ingredient costs to find the total recipe cost.

Recipe - Cream of Tomato Soup (Portions = 8, Portion Size = 250 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Canned Tomatoes	1.5 L	$45.16	6	2.84 L	$2.65/L	1	$2.65/ L	$3.98
Onion	142 g	$33.66	50	1 lb	$0.00148/g	0.90	$0.00164/g	$0.23
Unsalted Butter	85 g	$305.26	40	454 g	$0.01681/g	1	$0.01681/g	$1.43
Garlic	14 g	$10.00	1	3 lb	$0.00734/g	0.87	$0.00844/g	$0.12
Heavy Cream	240 mL	$98.77	12	1 L	$0.00823/mL	1	$0.00823/mL	$1.98
Salt	10 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	$0.02
Basil	25 g	$8.22	4	25 g	$0.0822/g	0.56	$0.14679/g	$3.67
							Total Recipe Cost	$11.43

Therefore, the total recipe cost for the cream of tomato soup recipe is $11.43. The next steps are to learn how to calculate cost per portion and menu price.

F. Cost Per Portion

Calculating the *cost per portion* is simple once the total recipe cost is known. To calculate the cost per portion, divide the total recipe cost by the number of portions in the recipe.

$$Cost\ Per\ Portion = \frac{Total\ Recipe\ Cost}{Number\ of\ Portions}$$

Example 1H: Calculating Cost Per portion

The tomato soup recipe above provides 8 portions when made, and the total recipe cost is $11.43. What is the cost per portion?

Total Recipe cost = $11.43

Number of Portions = 8

$$Cost\ Per\ Portion = \frac{Total\ Recipe\ Cost}{Number\ of\ Portions}$$

$$Cost\ Per\ Portion = \frac{\$11.43}{8}$$

$$Cost\ Per\ Portion = \$1.43\ (rounded\ to\ the\ nearest\ cent)$$

Thus, the cost per portion is $1.43.

G. Food Cost Percentage Menu Pricing

Food cost percentage menu pricing is one of many ways to calculate a menu price for a portion or dish. This method is one of the easiest and quickest ways to determine the menu price, but the convenience of using this method does come with a compromise in precision since food cost percentage menu pricing does not account for the labour required to prepare each dish (Labensky et al., 2006).

To calculate the menu price with this method, you need to know the food cost percentage. The *food cost percentage* is the ratio of food cost to food sales (Labensky et al., 2006). *Food cost* is also known as cost of goods sold, which is defined as the dollar value associated with the quantity of inventory a food service establishment has used to fabricate the food sold in a defined amount of time (Labensky et al., 2006), such as over a month. Determining and maintaining a reliable and consistent food cost percentage takes time and experience, but once it is known, calculating the price of a dish is straightforward.

Furthermore, some food service establishments may use the same food cost percentage for each menu item, or others may use different food cost percentages for appetizers, mains, and desserts. For example, a restaurant could decide to employ a

food cost percentage of 25% for all menu items or instead employ food cost percentages of 15% for appetizers, 30% for main courses, and 20% for desserts. The best approach will differ among food service establishments.

Once we know the cost per portion of a recipe, we can calculate the *menu price* as long as we know the desired food cost percentage for the dish. To determine the menu price, divide the food cost percentage by 100%, and then take the resulting decimal answer and divide it into the cost per portion. Use the following formula:

$$Menu\ Price = \frac{Cost\ Per\ Portion}{(Food\ Cost\ Percentage\ /\ 100\%)}$$

Example 1I: Calculating Menu Price with a Set Food Cost Percentage

If the cost per portion is $1.43, what is the menu price at a food cost percentage of 25%?

Cost Per Portion = $1.43

Food Cost Percentage = 25%

$$Menu\ Price = \frac{Cost\ Per\ Portion}{(Food\ Cost\ Percentage\ /\ 100\%)}$$

$$Menu\ Price = \frac{\$1.43}{(25\ \%\ /\ 100\%)}$$

$$Menu\ Price = \frac{\$1.43}{0.25}$$

$$Menu\ Price = \$5.72$$

Thus, the suggested menu price is $5.72. It is common to include the cost per portion and menu price with the costing table. You'll be asked to do this in the problem sets (see Example 1J).

Example 1J: Costing Table with Cost Per Portion and Menu Price Included

Recipe - Cream of Tomato Soup (Portions = 8, Portion Size = 250 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Canned Tomatoes	1.5 L	$45.16	6	2.84 L	$2.65/L	1	$2.65/L	$3.98
Onion	142 g	$33.66	50	1 lb	$0.00148/g	0.90	$0.00164/g	$0.23
Unsalted Butter	85 g	$305.26	40	454 g	$0.01681/g	1	$0.01681/g	$1.43
Garlic	14 g	$10.00	1	3 lb	$0.00734/g	0.87	$0.00844/g	$0.12
Heavy Cream	240 mL	$98.77	12	1 L	$0.00823/mL	1	$0.00823/mL	$1.98
Salt	10 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	$0.02
Basil	25 g	$8.22	4	25 g	$0.0822/g	0.56	$0.14679/g	$3.67
							Total Recipe Cost	$11.43
							Cost Per Portion	$1.43
							Menu Price at 25% Food Cost	$5.72

Problem Set 1

Draw a costing table, and then find the total recipe cost, cost per portion, and menu price for the following recipes. Include the cost per portion and menu price in the costing table, as seen in example 1J. Use the supplementary information found in the appendices of this resource to answer the problems.

To calculate menu prices, use a food cost percentage of 25% for all recipes. *Round costs per unit and edible portion costs to five decimal places when calculations provide answers of more than 5 decimal places, and round ingredient costs, total recipe costs, costs per portion, and menu prices to the nearest cent (two decimal places).*

a) Recipe – Mayonnaise (Portions = 16, Portion Size = 35 mL)

Ingredients	Quantity of Each Ingredient
Canola Oil	480 mL
Yolk (Egg)	30 mL
Dijon Mustard	10 mL
White Vinegar	30 mL
Iodized Salt	6 g

b) Recipe – Red Wine Gravy (Portions = 25, Portion Size = 60 mL)

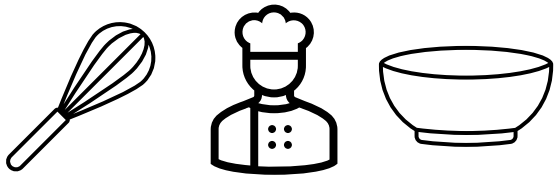
Ingredients	Quantity of Each Ingredient
Unsalted Beef Stock	1 L
Red Wine	240 mL
Unsalted Butter	114 g
All Purpose Flour	64 g
Tomato Paste	15 mL
Onion	55 g
Thyme	4 g
Bay Laurel	2 g
Black Peppercorn	4 g
Iodized Salt	7 g

c) Recipe – Salmon Cakes (Portions = 10, Portion Size = 115 g)

Ingredients	Quantity of Each Ingredient
Salmon (head Off)	1.3 kg
Garlic	40 g
Shallot	0.25 kg
Dijon Mustard	50 mL
Yolk (Egg)	150 mL
Mayonnaise	300 mL
Panko	140 g
Fresh Dill Weed	20 g
Iodized Salt	30 g

d) Recipe – Thin Bechamel (Portions = 8, Portion Size = 90 mL)

Ingredients	Quantity of Each Ingredient
Homogenized Milk	720 mL
Unsalted Butter	85 g
All Purpose Flour	48 g
Onion	20 g
Bay Laurel	0.5 g
Clove	0.2 g
Nutmeg	0.6 g
Iodized Salt	9 g



Answers to Problem Set 1

a) Recipe – Mayonnaise (Portions = 16, Portion Size = 35 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Canola Oil	480 mL	$55.61	1	16 L	$0.00348/mL	1	$0.00348/mL	$1.67
Yolk (Egg)	30 mL	$21.56	5	500 mL	$0.00862/mL	1	$0.00862/mL	$0.26
Dijon Mustard	10 mL	$41.37	12	325 mL	$0.01061/mL	1	$0.01061/mL	$0.11
White Vinegar	30 mL	$18.57	4	5 L	$0.00093/mL	1	$0.00093/mL	$0.03
Iodized Salt	6 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	$0.01
							Total Recipe Cost	$2.08
							Cost Per Portion	$0.13
							Menu Price at 25% Food Cost	$0.52

b) Recipe – Red Wine Gravy (Portions = 25, Portion Size = 60 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Unsalted Beef Stock	1 L	$75.86	12	900 mL	$7.02407/L	1	$7.02407/L	$7.02
Red Wine	240 mL	$118.73	1	20 L	$0.00594/mL	1	$0.00594/mL	$1.43
Unsalted Butter	114 g	$305.26	40	454 g	$0.01681/g	1	$0.01681/g	$1.92
All Purpose Flour	64 g	$30.42	1	20 kg	$0.00152/g	1	$0.00152/g	$0.10
Tomato Paste	15 mL	$79.88	24	369 mL	$0.00902/mL	1	$0.00902/mL	$0.14
Onion	55 g	$33.66	50	1 lb	$0.00148/g	0.90	$0.00164/g	$0.09
Thyme	4 g	$16.20	12	25 g	$0.054/g	0.40	$0.135/g	$0.54
Bay Laurel	2 g	$28.05	1	450 g	$0.06233/g	1	$0.06233/g	$0.12
Black Peppercorn	4 g	$123.83	1	2.72 kg	$0.04553/g	1	$0.04553/g	$0.18
Iodized Salt	7 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	$0.01
							Total Recipe Cost	$11.55
							Cost Per Portion	$0.46
							Menu Price at 25% Food Cost	$1.84

c) Recipe – Salmon Cakes (Portions = 10, Portion Size = 115 g)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Salmon (Head Off)	1.3 kg	$25.23	1	10 lb	$5.5506/kg	0.65	$8.53938/kg	$11.10
Garlic	40 g	$10.00	1	3 lb	$0.00734/g	0.87	$0.00844/g	$0.34
Shallot	0.25 kg	$30.66	10	1 lb	$6.7452/kg	0.89	$7.57888/kg	$1.89
Dijon Mustard	50 mL	$41.37	12	325 mL	$0.01061/mL	1	$0.01061/mL	$0.53
Yolk (Egg)	150 mL	$21.56	5	500 mL	$0.00862/mL	1	$0.00862/mL	$1.29
Mayonnaise	300 mL	$70.22	2	4 L	$0.00878/mL	1	$0.00878/mL	$2.63
Panko	140 g	$45.61	1	11.3 kg	$0.00404/g	1	$0.00404/g	$0.57
Dill Weed (Fresh)	20 g	$71.08	24	2 oz	$0.05214/g	0.56	$0.09311/g	$1.86
Iodized Salt	30 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	$0.05
							Total Recipe Cost	$20.26
							Cost Per Portion	$2.03
							Menu Price at 25% Food Cost	$8.12

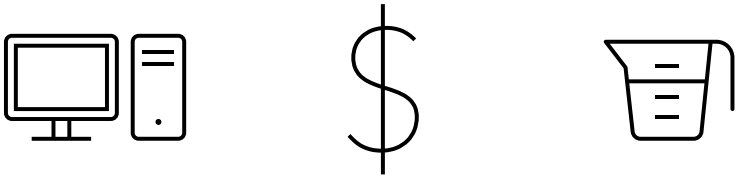
d) Recipe – Thin Bechamel (Portions = 8, Portion Size = 90 mL)

Ingredient	Ingredient Quantity	AP Cost	Number of Units	Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
Homogenized Milk	720 mL	$37.83	12	1 L	$0.00315/mL	1	$0.00315/mL	$2.27
Unsalted Butter	85 g	$305.26	40	454 g	$0.01681/g	1	$0.01681/g	$1.43
All Purpose Flour	48 g	$30.42	1	20 kg	$0.00152/g	1	$0.00152/g	$0.07
Onion	20 g	$33.66	50	1 lb	$0.00148/g	0.90	$0.00164/g	$0.03
Bay Laurel	0.5 g	$28.05	1	450 g	$0.06233/g	1	$0.06233/g	$0.03
Clove	0.2 g	$42,48	1	500 g	$0.08496/g	1	$0.08496/g	$0.02
Nutmeg	0.6 g	$34.84	1	525 g	$0.06636/g	1	$0.06636/g	$0.04
Iodized Salt	9 g	$40.30	24	1 kg	$0.00168/g	1	$0.00168/g	$0.02
							Total Recipe Cost	$3.91
							Cost Per Portion	$0.49
							Menu Price at 25% Food Cost	$1.96

Chapter 2- Costing Recipes with Excel

When costing recipes with Excel, we'll use the same formulas as those we used to cost with a calculator, with the exception that we'll learn how to program Excel to perform the calculations for us.

In this chapter, a general step-by-step approach to recipe costing and menu pricing in Excel is introduced. Next, these steps are applied to an example recipe. Following this lesson, learners have an opportunity to complete a problem set. After the problem set, learners can participate in a "mock order" activity.



General Steps to Costing a Recipe with Excel

Note that in the next section, learners will be doing each of these steps with a recipe provided for practice.

Step 1: Open Excel and create a new spreadsheet. Name and save the spreadsheet to the desktop, portable storage device, or cloud.

Step 2: Create a title for your spreadsheet in cell A1. The title should be the name of the recipe that you're costing. Enter titles for the number of Portions, Portion Size, and Food Cost Percentage (%) into cells A3, A4, and E4, respectively. Next, enter the following column titles in the spreadsheet, from A6 to J6: Ingredient, Ingredient Quantity, As Purchased (AP) Cost, Number (#) of Units, Unit Quantity, Converted Unit Quantity, Cost Per Unit, Yield Factor, Edible Portion (EP) Cost, Ingredient Cost. Ensure the column titles are bolded, wrapped, centered, and oriented vertically.

Fit the column titles into the cells by adjusting the cells sizes. Notice, we have one extra column title in contrast to costing with a calculator, Converted Unit Quantity, so we can use Excel's convert function. In column I, underneath the EP Cost of the last ingredient in the list, type bolded and wrapped titles for Total Recipe Cost, Cost Per Portion, and Menu Price. The cell numbers of these titles will vary according to the number of recipe ingredients. A functional format for the costing table is seen in Figure 3.

Figure 3.

Basic Costing Table Format

	A	B	C	D	E	F	G	H	I	J
1	**Title**									
2										
3	Portions									
4	Portion Size				Food Cost %					
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7										
8										
9										
10										
11										
12										
13									**Total Recipe Cost**	
14									**Cost Per Portion**	
15									**Menu Price**	

Step 3: Enter the quantity for the number of portions, portion size, and food cost percentage into cells B3, B4, and F4, respectively. Ensure the unit of measurement and number of decimal places are displayed for the portion size. Use the Custom category under the Number tab of the Format Cells dialogue box.

Step 4: Enter the ingredients into the spreadsheet, beginning at cell A7. Enter the ingredient quantities, beginning with cell B7. Ensure the ingredient quantities have the same units of measurement and decimal places as the original recipe. You'll have to use the Custom option in the Number tab of the Format Cells dialogue box to format each cell, so the units and decimal places are properly displayed in the cells. This process was covered in the second module, Recipe Scaling and Yield Factors.

Step 5: Enter the AP Costs found on the purchase order, invoice, or quote, into the spreadsheet, beginning at cell C7. Next, format the cells to currency and two decimal places, so the dollar sign ($) and nearest cent are displayed for each cost. Appendix B contains AP Costs for the recipe ingredients in this resource.

Step 6: Enter the number of units and unit quantity, beginning at cells D7 and E7. Next, format the cells with the Custom option to ensure unit quantities display the correct units of measurement and decimal places found on the purchase order, invoice, or quote. In this resource, Appendix B contains this information.

Step 7: If necessary, convert unit quantities to the same metric unit of measurement as the ingredient quantity in each row, beginning at cell F7. Use Excel's convert function to accomplish this task. Appendix D contains the measurement unit abbreviations necessary to use with the convert function. Next, format the cells with the Custom option to display the units of measurement and decimal places. For quantities already in the same metric unit as the ingredient quantity, equate the cells under the Converted Unit Quantity title to their respective cells under the Unit Quantity title in column E.

Step 8: Program Excel to calculate the Cost Per Unit for each ingredient.

$$Cost\ Per\ Unit = \frac{As\ Purchased\ Cost}{Number\ of\ Units\ x\ Unit\ Quantity}$$

Begin with cell G7. Next**,** format the cells using the Custom option in the Number tab of the Format Cells dialogue box. Each cell should be formatted to display a dollar sign, five decimal places, and the unit of measurement.

Step 9: Enter the yield factor for each ingredient, starting at cell H7. Yield factors for recipe items in this resource are found in Appendix C.

Step 10: Program Excel to calculate the EP costs, beginning with cell I7.

$$Edible\ Portion\ (EP)\ Cost = \frac{Cost\ Per\ Unit}{Yield\ Factor}$$

Next**,** format each cell using the Custom option. Ensure each cell has a dollar sign, five decimal places, and the correct unit of measurement.

Step 11: Program Excel to calculate the cost of each ingredient, beginning in cell J7.

$$Ingredient\ Cost = Quantity\ of\ Ingredient\ x\ Edible\ Portion\ Cost$$

Next, format ingredient costs to Currency and two decimal places, so a dollar sign appears, and each cost is rounded to the nearest cent.

Step 12*:* In the J column, to the right of the cell with the Total Recipe Cost title, program Excel to sum the ingredient costs to calculate the Total Recipe Cost. Next, format the cell to Currency and two decimal places.

Step 13: In the cell to the right of the Cost Per Portion title, program Excel to calculate the Cost per Portion.

$$Cost\ Per\ Portion = \frac{Total\ Recipe\ Cost}{Number\ of\ Portions}$$

Next**,** format the cell to Currency and two decimal places.

Step 14: In the cell to the right of the Menu Price title, program Excel to calculate the menu price for a portion of the recipe.

$$Menu\ Price = \frac{Cost\ Per\ Portion}{(Food\ Cost\ Percentage\ /\ 100\%)}$$

Next**,** format the cell to Currency and two decimal places. In the following example, more detailed instructions are provided to understand how to cost a recipe using Excel.

Example 2: Costing a Recipe with Excel

Find the total recipe cost, cost per portion and menu price for the following recipe where a portion has a food cost percentage of 25%:

Recipe – Creamy Hummus (Portions = 8, Portion Size = 120 mL)

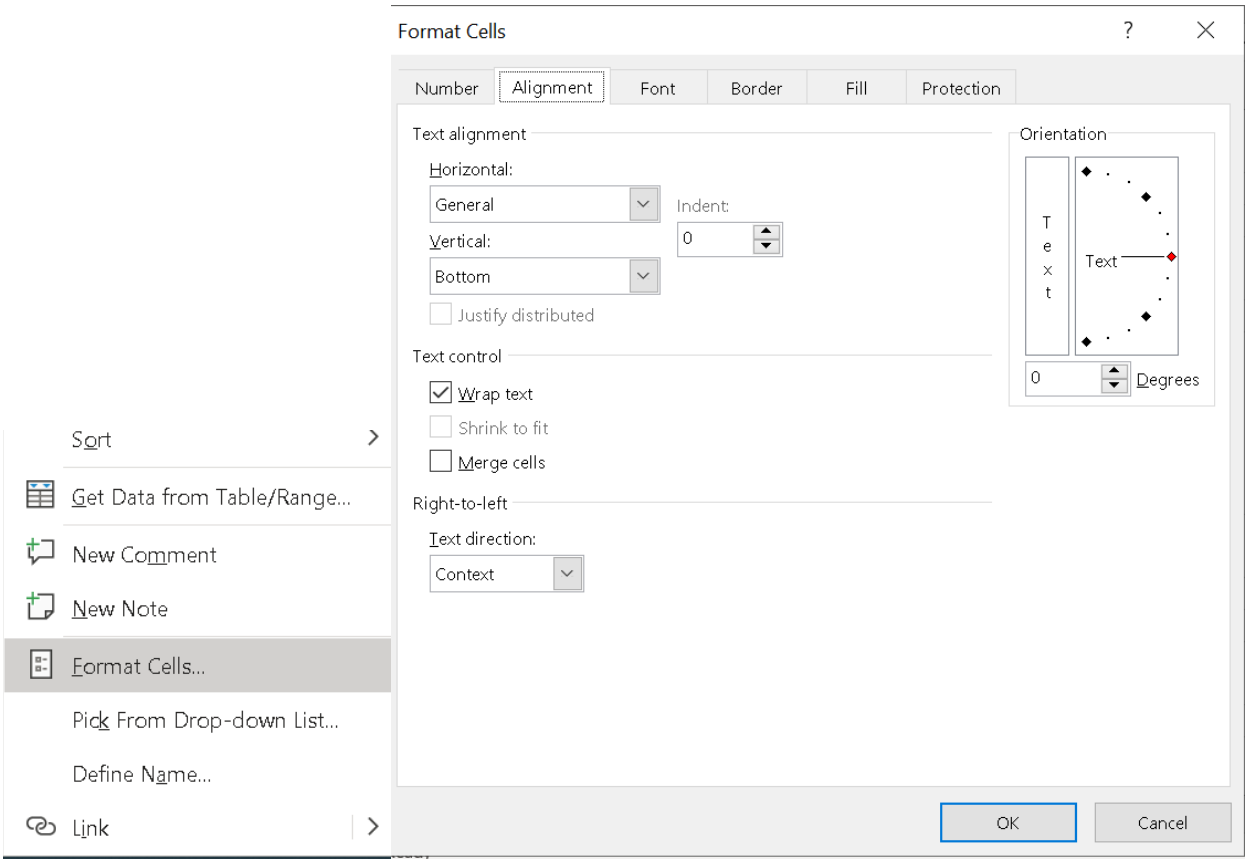
Ingredients	Quantity of Each Ingredient
Dried Chickpeas	210 g
Tahini	198 mL
Garlic	28 g
Lemon Juice	150 mL
Olive Oil	180 mL
Iodized Salt	18 g

Step 1: Open Excel and create a new spreadsheet. Name and save the spreadsheet to the desktop, portable storage device, or cloud.

Step 2: Enter the title, Creamy Hummus, in cell A1. Bold and wrap the title**.** The wrap function is found under Text Control in the Alignment tab of the Format Cells dialogue box. To wrap the text, right-click on cell A1, and left click on “Format Cells” in the pop-up menu. Select “Wrap text” by left clicking on the check box. Left click on the “OK” button to exit the dialogue box (see Figure 4).

Figure 4.

Step 2_How to Wrap the Text in Cell A1



Enter titles for the number of Portions, Portion Size, and Food Cost Percentage (%) into cells A3, A4, and E4, respectively. Wrap the titles.

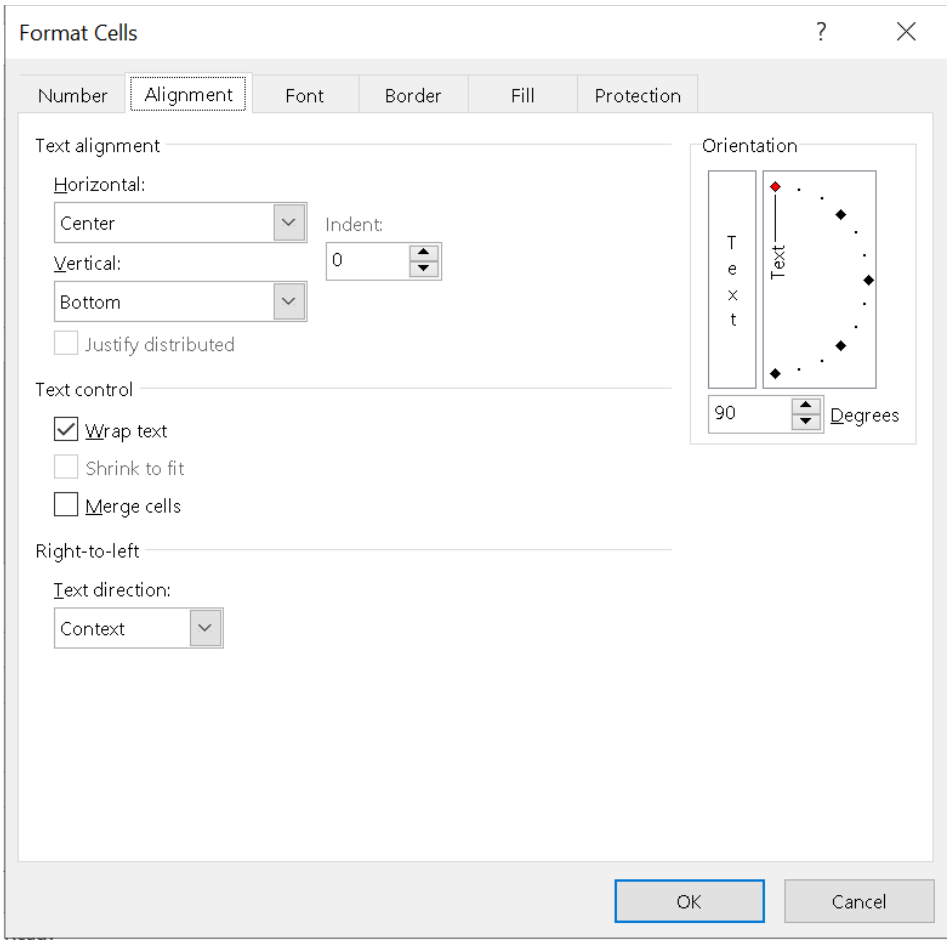
Next, enter the following column titles in the spreadsheet, from A6 to J6: Ingredient, Ingredient Quantity, AP Cost, # of Units, Unit Quantity, Converted Unit Quantity, Cost Per Unit, Yield Factor, EP Cost, Ingredient Cost. Ensure the column titles are bolded, wrapped, centered, and oriented vertically.

To orient all the titles vertically, left-click on cell A6, hold and drag the mouse across to cell J6 to highlight cells A6-J6. Right-click anywhere on the highlighted grey area and left-click on the Format Cells option in the menu that appears.

In the Format Cells dialogue box, left click on the Alignment tab and orient the text to 90°. Left click on the “OK” button (see Figure 5 on the next page).

Figure 5.

Step 2 Continued…How to Orient Titles Vertically



Fit the column titles into the cells by adjusting cell sizes (see Figure 6).

Figure 6.

Step 2 Continued…Column Titles Oriented Vertically and Cell Sizes Adjusted

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost

In cells I13, I14, and I15, enter titles for Total Recipe Cost, Cost Per Portion, and Menu Price. Ensure to bold and wrap the titles (see Figure 7).

Figure 7.

Step 2 Continued…Costing Spreadsheet for Creamy Hummus

	A	B	C	D	E	F	G	H	I	J
1	**Creamy Hummus**									
2										
3	Portions									
4	Portion Size				Food Cost %					
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7										
8										
9										
10										
11										
12										
13									**Total Recipe Cost**	
14									**Cost Per Portion**	
15									**Menu Price**	

Step 3: Enter the quantity for the number of portions (8), portion size (120 mL), and food cost percentage (25) into cells B3, B4, and F4, respectively. Ensure the unit of measurement and number of decimal places are displayed for the portion size. To do this, use the Custom category in the Number tab of the Format Cells dialogue box. For

this example, type 0 “mL” into the text box, and left click the “OK” button e.g., 0 “mL” (see Figure 8). The portion size will display zero decimal places, as displayed in the recipe (see Figure 9 on the next page).

Figure 8.

Step 3_Formatting Units and Decimal Places for Portion Size

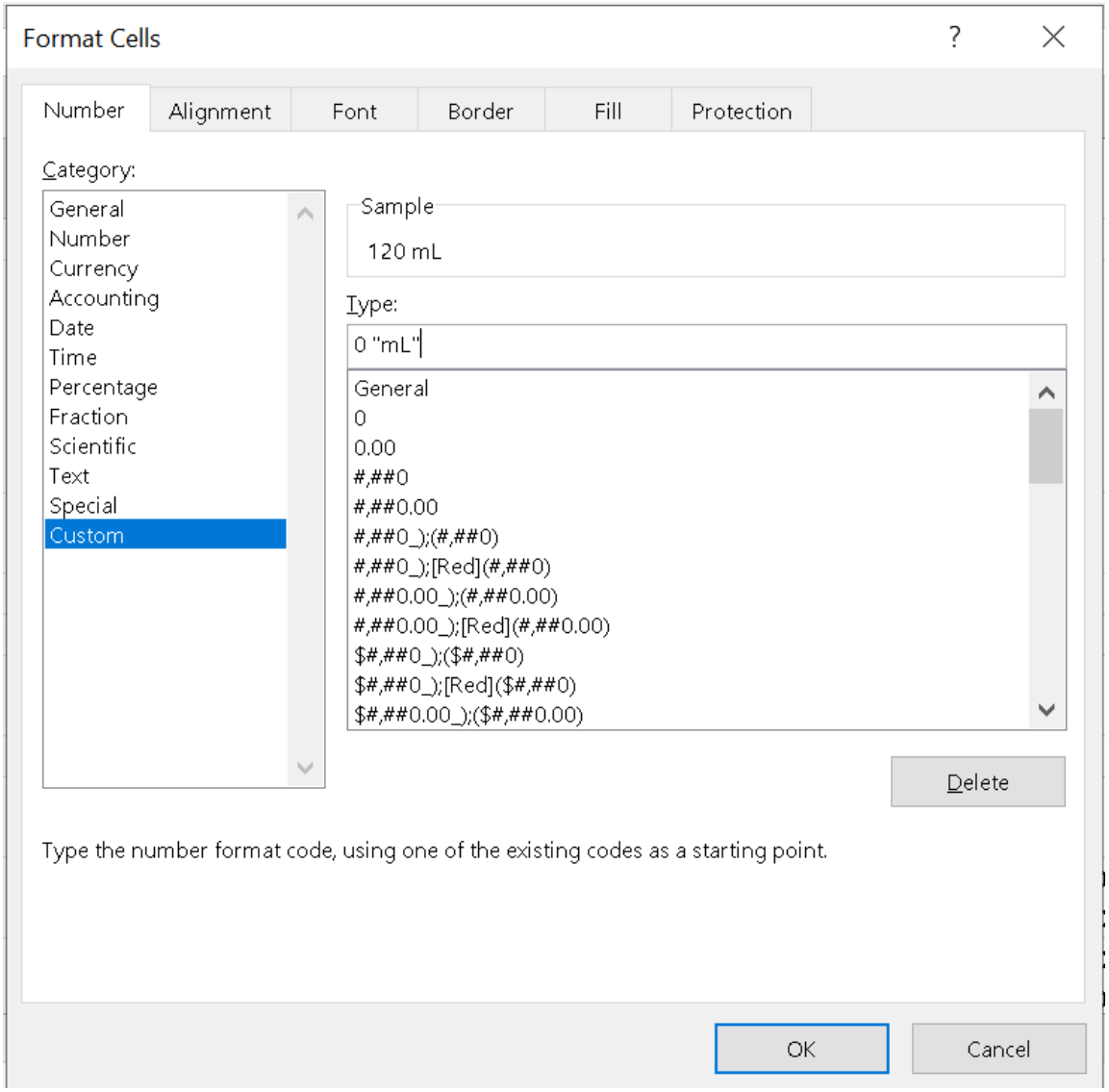


Figure 9.

Step 3 Continued…Number of Portions, Food Cost Percentage, and Portion Size with Unit and Zero Decimal Places

	A	B	C	D	E	F
1	**Creamy Hummus**					
2						
3	Portions	8				
4	Portion Size	120 mL			Food Cost %	25

Step 4: Enter the ingredients into the spreadsheet, beginning at cell A7 and finishing at cell A12. Wrap the text in the ingredient cells. Enter the ingredient quantities, beginning at cell B7 and finishing at cell B12. Ensure the ingredient quantities have the same units of measurement and decimal places as the original recipe. You'll have to use the Custom category in the Number tab of the Format Cells dialogue box to format each cell, so the units and decimal places are properly displayed in the cells (see Figure 10 on the next page). This process was covered in the previous step and in the second module (Recipe Scaling and Yield Factors).

Figure 10.

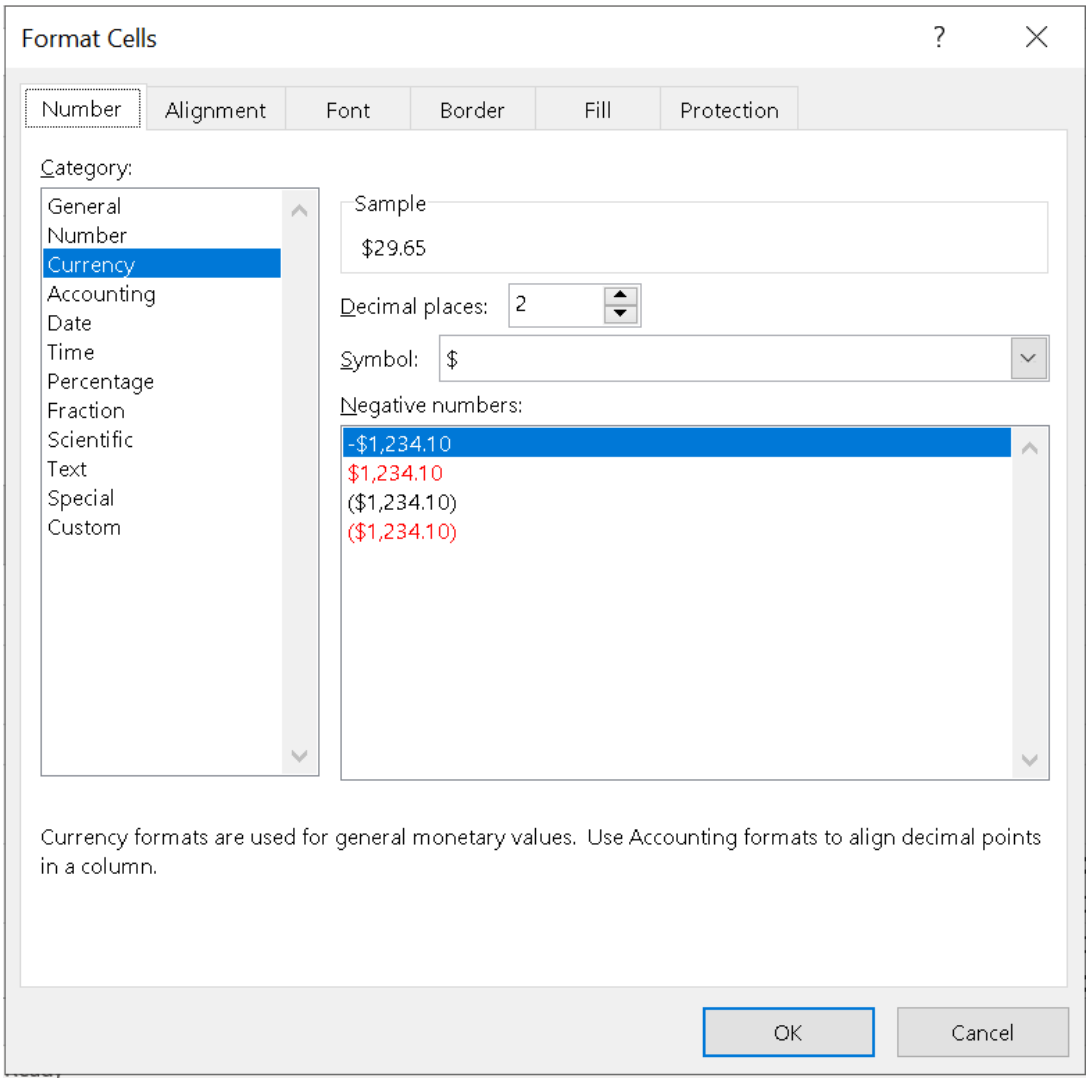
Step 4_Ingredients and Ingredient Quantities with Units and Original Number of Decimal Places

	Ingredient	Ingredient Quantity
6		
7	Dried Chickpeas	210 g
8	Tahini	198 mL
9	Garlic	28 g
10	Lemon Juice	150 mL
11	Olive Oil	180 mL
12	Iodized Salt	18 g

Step 5: In the Number tab of the Format Cells dialogue box, format cell C7 (the AP Cost of Dried Chickpeas) to Currency and two decimal places, so the dollar sign ($) and nearest cent are displayed for each cost (see Figure 11 on the next page).

Figure 11.

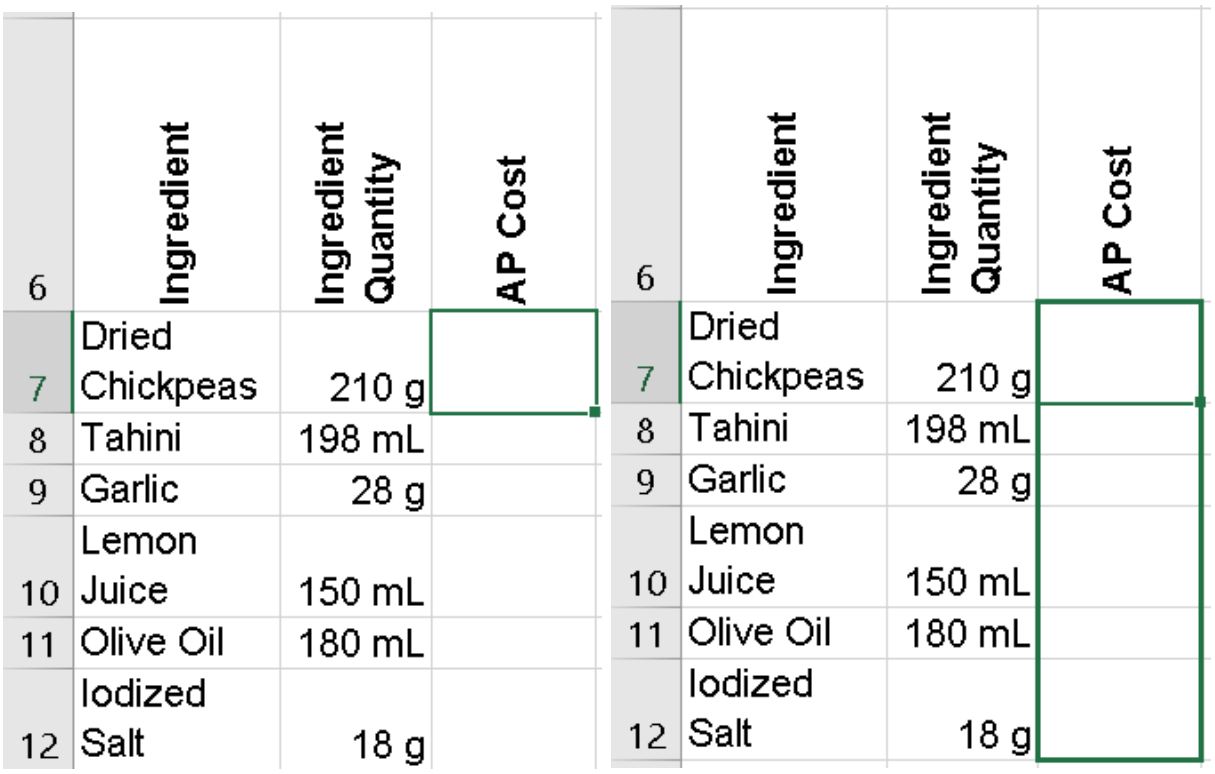
Step 5_Formatting Cell C7 to Currency and Two Decimal Places



To quickly format the remaining cells (C8-C12) to Currency and two decimal places, grab the fill handle at the bottom-right corner of cell C7 by left-clicking on it and holding the left-click button while dragging the fill handle to cell C12, and then release the left-click button (see Figure 12 on the next page).

Figure 12.

Step 5 Continued…Formatting Cells C8 to C12 with Fill Handle



6	Ingredient	Ingredient Quantity	AP Cost
7	Dried Chickpeas	210 g	
8	Tahini	198 mL	
9	Garlic	28 g	
10	Lemon Juice	150 mL	
11	Olive Oil	180 mL	
12	Iodized Salt	18 g	

6	Ingredient	Ingredient Quantity	AP Cost
7	Dried Chickpeas	210 g	
8	Tahini	198 mL	
9	Garlic	28 g	
10	Lemon Juice	150 mL	
11	Olive Oil	180 mL	
12	Iodized Salt	18 g	

Type the AP Costs for the ingredients into cells C7 to C12. The AP Costs are found in Appendix B (see Figure 13 on the next page).

Figure 13.

Step 5 Continued…AP Costs

6	Ingredient	Ingredient Quantity	AP Cost
7	Dried Chickpeas	210 g	$29.65
8	Tahini	198 mL	$67.41
9	Garlic	28 g	$10.00
10	Lemon Juice	150 mL	$25.02
11	Olive Oil	180 mL	$181.53
12	Iodized Salt	18 g	$40.30

Step 6: Enter the number of units and unit quantity associated with the AP costs for each ingredient in the recipe, beginning at cells D7 and E7 and finishing at cells D12 and E12. Format the cells within the Custom category of the Number tab in the Format Cells dialogue box to ensure unit quantities display the correct units of measurement and decimal places found in Appendix B. You'll have to format each cell separately (see Figure 14 on the next page).

Figure 14.

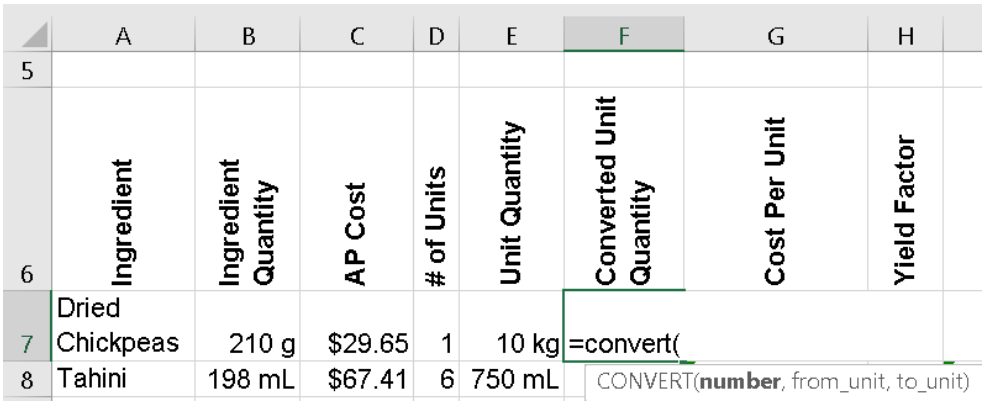
Step 6 Number of Units and Unit Quantities Displayed with Measurement Units and Decimal Places as Found in Appendix B

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity
7	Dried Chickpeas	210 g	$29.65	1	10 kg
8	Tahini	198 mL	$67.41	6	750 mL
9	Garlic	28 g	$10.00	1	3 lb
10	Lemon Juice	150 mL	$25.02	2	3.8 L
11	Olive Oil	180 mL	$181.53	4	3 L
12	Iodized Salt	18 g	$40.30	24	1 kg

Step 7: Where necessary, convert unit quantities to the same metric unit of measurement as the ingredient quantity in each row, beginning at cell F7. Use Excel's convert function to accomplish this task (see Appendix D to find the unit abbreviations to use with Excel's convert function). For example, the ingredient quantity of Dried Chickpeas for the hummus recipe is in grams (g), but the unit quantity as purchased from the supplier is in kilograms (kg). In this instance, both categories are in metric units of measurement, but they are different units. We'll use Excel's convert function to convert the unit quantity from kg to g (see Figure 15). To do this, right-click on cell F7 and type =convert(

Figure 15.

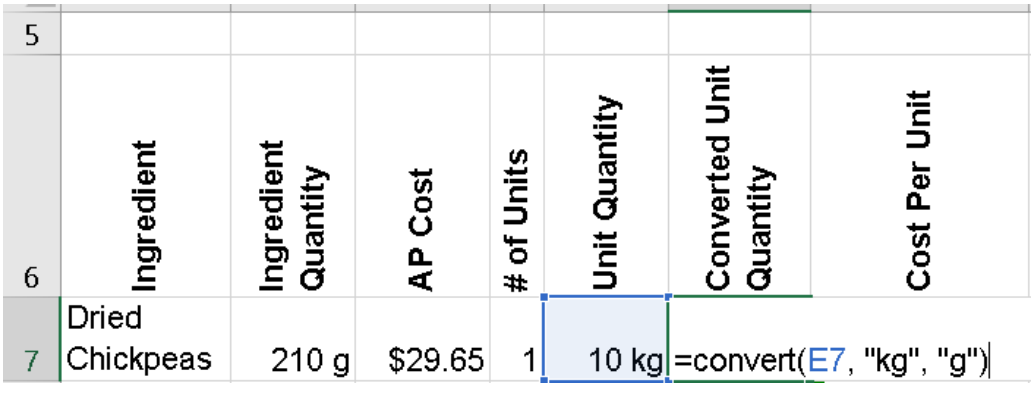
Step 7_Convert Dried Chickpeas Quantity and Unit to Same Metric Unit as the Ingredient Quantity



Follow the prompt that appears. Right-click on cell E7, type a comma. Press the spacebar, type “kg”, followed by typing another comma. Press the spacebar and lastly, type “g” and close the parentheses. In other words, the formula should be **=convert(E7, “kg”, “g”)**. See Figure 16 for a better illustration of the convert function.

Figure 16.

Step 7 Continued…Variables for Dried Chickpeas Unit Quantity Measurement Conversion Inputted into Excel’s Convert Function



Press Enter on the keyboard. Format the cell with the Custom category in the Number tab of the Format Cells dialogue box to display the units of measurement and decimal places.

Figure 17.

Step 7 Continued…Unit Quantity of Dried Chickpeas Converted from Kilograms to Grams

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g

For unit quantities already in the same metric unit of measurement as the ingredient quantities, simply equate the Converted Unit Quantity to the Unit Quantity. As an example, for the Tahini Paste, both the Ingredient Quantity and the Unit Quantity are in the metric unit of millilitres (mL). Left-click cell F8, type an equal sign, the left-click on cell E8 (see Figure 18 on the next page).

Figure 18.

Step 7 Continued…Equating Cell F8 to E8

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g
8	Tahini	198 mL	$67.41	6	750 mL	=E8

Press Enter on the keyboard, and the quantity, decimal places, and unit of measurement for cell E8 is displayed in cell F8 (see Figure 19).

Figure 19.

Step 7 Continued…Result of Equating Cell E8 to F8

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g
8	Tahini	198 mL	$67.41	6	750 mL	750 mL

Step 8: Program Excel to calculate the Cost Per Unit for each ingredient.

$$Cost\ Per\ Unit = \frac{As\ Purchased\ Cost}{Number\ of\ Units\ x\ Unit\ Quantity}$$

Begin with cell G7. Left-click on cell G7, type an equal sign, left-click on cell C7, type a division sign, type an open parentheses sign, left-click on cell D7, type the multiplication sign (*), left-click on cell F7, and type the close parentheses sign (see Figure 20).

Figure 20.

Step 8 Calculating Cost Per Unit of Dried Chickpeas

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	=C7/(D7*F7)

Press Enter on the keyboard (see Figure 21).

Figure 21.

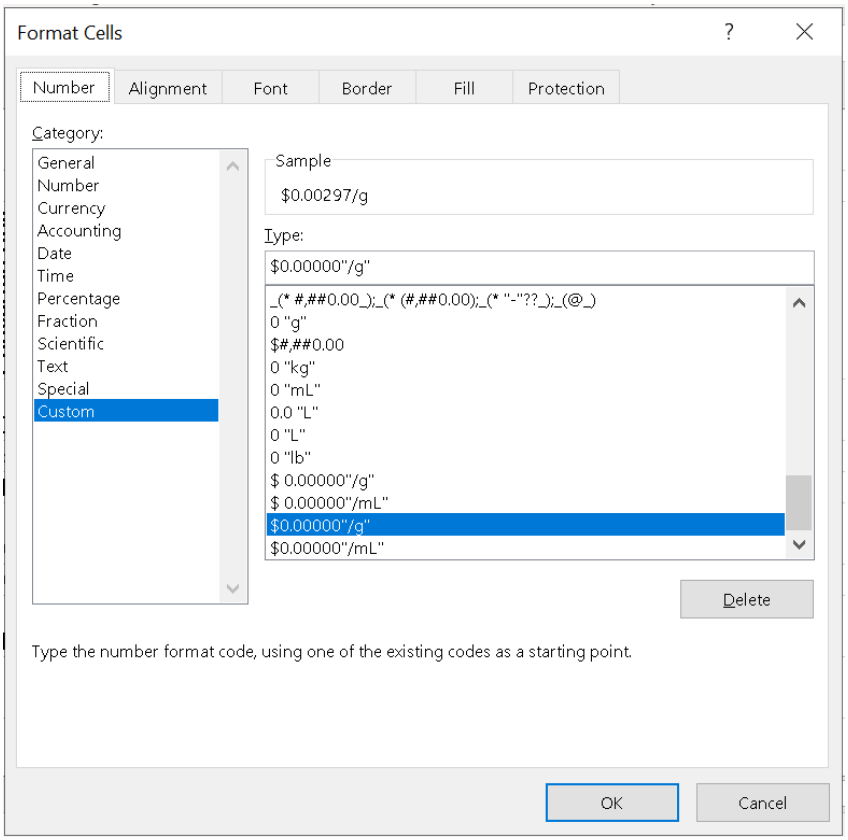
Step 8 Continued…Cost Per Unit of Dried Chickpeas (Unformatted)

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00

Figure 21 displays $0.00 in cell I7 after the Enter button is pressed, but this will change once the cell is formatted as per the following directions in this step. To perform the calculation for the remaining range of cells, G8-G12, grab the fill handle on the bottom-right corner of cell G7, drag it to cell G12, and then release. Next, format all the cells individually using the Custom category in the Number tab of the Format Cells dialogue box. Each cell should be formatted to display a dollar sign, five decimal places, and the unit of measurement. For cell G7, type $0.00000“/g” in the Custom text box (see Figure 22).

Figure 22.

Step 8 Continued…Formatting Cell G7



Left click on the “OK” button (see Figure 23).

Figure 23.

Step 8 Continued…Cell G7 Properly Formatted

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g

Format the remaining cells to coincide with the correct unit of measurement and five decimal places for each ingredient (see Figure 24).

Figure 24.

Step 8 Continued…Cells G8 to G12 Formatted

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g

Step 9: Enter the yield factor for each ingredient, starting at cell H7 and finishing at cell H12 (see Figure 25). Yield factors for recipe items in this resource are found in Appendix C.

Figure 25.

Step 9 Yield Factors from Appendix C Entered into Yield Factor Column of Spreadsheet

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1

Step 10: Program Excel to calculate the EP costs, beginning with cell I7.

$$Edible\ Portion\ (EP)\ Cost = \frac{Cost\ Per\ Unit}{Yield\ Factor}$$

For cell I7, left-click on cell I7, type an equal sign, left-click on cell G7, type a division sign, and left-click on cell H7 (see Figure 26).

Figure 26.

Step 10_Calculating EP Cost of Dried Chickpeas

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	=G7/H7

Press Enter on the keyboard (see Figure 27).

Figure 27.

Step 10 Continued…EP Cost for Dried Chickpeas (Unformatted)

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	0.002965

To perform the calculation for the remaining range of cells, I8-I12, grab the fill handle on the bottom-right corner of cell I7, drag it to cell I12, and then release. Format each cell using the Custom category in the Number tab of the Format Cells dialogue box. Ensure each cell has a dollar sign, five decimal places, and the correct unit of measurement (see Figure 28 on the next page).

Figure 28.

Step 10 Continued…EP Costs Calculated and Formatted

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1	$0.01498/mL
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87	$0.00845/g
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1	$0.00329/mL
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1	$0.01513/mL
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g

Step 11: Program Excel to calculate the cost of each ingredient, beginning in cell J7.

$$Ingredient\ Cost = Quantity\ of\ Ingredient\ x\ Edible\ Portion\ Cost$$

For cell J7, left-click on the cell, type an equal sign, left-click on cell B7, type a multiplication sign, and left-click on cell I7 (see Figure 29).

Figure 29.

Step 11_Calculating Ingredient Cost of Dried Chickpeas

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	=B7* I7

Press Enter on the keyboard (see Figure 30 on the next page).

Figure 30.

Step 11 Continued…Ingredient Cost for Dried Chickpeas (Unformatted)

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	0.62

Use the Currency category in the Number tab of the Format Cells dialogue box to format cell J7 to two decimal places (the nearest cent). To perform the calculation and formatting for the remaining range of cells, J8-J12, grab the fill handle on the bottom-right corner of cell J7, drag it to cell J12, and then release (see Figure 31).

Figure 31.

Step 11 Continued…Formatted Ingredient Costs

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	$0.62
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1	$0.01498/mL	$2.97
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87	$0.00845/g	$0.24
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1	$0.00329/mL	$0.49
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1	$0.01513/mL	$2.72
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.03

Step 12: Program Excel to sum the ingredient costs to calculate the Total Recipe Cost. Left-click on J13, type an equal sign, type sum(, left-click on cell J7 and hold the clicker, drag the cursor to cell J12, release, and type the close parentheses sign. In other words, the formula should be **= sum(J7:J12)**. For an illustration, see Figure 32.

Figure 32.

Step 12_Calculating Total Recipe Cost in Cell J13

	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
6										
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	$0.62
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1	$0.01498/mL	$2.97
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87	$0.00845/g	$0.24
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1	$0.00329/mL	$0.49
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1	$0.01513/mL	$2.72
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.03
13									Total Recipe Cost	=sum(
14									Cost Per Portion	J7: J12)
15									Menu Price	SUM(**number1**, [number2], ...)

Press Enter on the keyboard and format the cell to Currency and two decimal places (see Figure 33 on the next page).

Figure 33.

Step 12 Continued…Formatted Total Recipe Cost

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	$0.62
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1	$0.01498/mL	$2.97
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87	$0.00845/g	$0.24
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1	$0.00329/mL	$0.49
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1	$0.01513/mL	$2.72
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.03
13									**Total Recipe Cost**	$7.07

Step 13: Program Excel to calculate the Cost Per Portion.

$$Cost\ Per\ Portion = \frac{Total\ Recipe\ Cost}{Number\ of\ Portions}$$

Left-click J14, type an equal sign, left-click on cell J13, type a division sign, left-click on cell B3 (see Figure 34 on the next page).

Figure 34.

Step 13_Calculating Cost Per Portion

3	Portions	8								
4	Portion Size	120 mL			Food Cost %	25				
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	$0.62
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1	$0.01498/mL	$2.97
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87	$0.00845/g	$0.24
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1	$0.00329/mL	$0.49
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1	$0.01513/mL	$2.72
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.03
13									**Total Recipe Cost**	$7.07
14									**Cost Per Portion**	=J13/B3

Press Enter on the keyboard and format the cell to Currency and two decimal places (see Figure 35 on the next page).

Figure 35.

Step 13 Continued…Formatted Cost Per Portion

6	Ingredient	Ingredient Quantity	AP Cost	# of Units	Unit Quantity	Converted Unit Quantity	Cost Per Unit	Yield Factor	EP Cost	Ingredient Cost
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	$0.62
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1	$0.01498/mL	$2.97
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87	$0.00845/g	$0.24
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1	$0.00329/mL	$0.49
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1	$0.01513/mL	$2.72
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.03
13									**Total Recipe Cost**	$7.07
14									**Cost Per Portion**	$0.88

Step 14: Program Excel to calculate the Menu Price for a portion of the recipe.

$$Menu\ Price = \frac{Cost\ Per\ Portion}{(Food\ Cost\ Percentage\ /\ 100\%)}$$

Left-click on cell J15, type an equal sign, left-click on cell J14, type a division sign, type an open parentheses sign, left-click on cell F4, type a division sign, type 100, type a close parentheses sign (see Figure 36 on the next page).

Figure 36.

Step 14_Calculating Menu Price

```
=J14/(F4/100)
```

Press Enter on the keyboard and format the cell to Currency and two decimal places to complete the exercise (see Figure 37).

Figure 37.

Step 14 Continued…Formatted Menu Price

	A	B	C	D	E	F	G	H	I	J
1	**Creamy Hummus**									
2										
3	Portions	8								
4	Portion Size	120 mL			Food Cost %	25				
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7	Dried Chickpeas	210 g	$29.65	1	10 kg	10000 g	$0.00297/g	1	$0.00297/g	$0.62
8	Tahini	198 mL	$67.41	6	750 mL	750 mL	$0.01498/mL	1	$0.01498/mL	$2.97
9	Garlic	28 g	$10.00	1	3 lb	1361 g	$0.00735/g	0.87	$0.00845/g	$0.24
10	Lemon Juice	150 mL	$25.02	2	3.8 L	3800 mL	$0.00329/mL	1	$0.00329/mL	$0.49
11	Olive Oil	180 mL	$181.53	4	3 L	3000 mL	$0.01513/mL	1	$0.01513/mL	$2.72
12	Iodized Salt	18 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.03
13									**Total Recipe Cost**	$7.07
14									**Cost Per Portion**	$0.88
15									**Menu Price**	$3.54

Thus, the total recipe cost, cost per portion, and suggested menu price are $7.07, $0.88, and $3.54, respectively.

Problem Set 2

Use Excel to find the recipe cost, cost per portion, and menu price of the following recipes. Use the supplementary information found in the appendices of this resource to answer the problems.

To calculate menu prices, use a food cost percentage of 25% for all recipes. *Round costs per unit and edible portion costs to five decimal places, and round ingredient costs, total recipe costs, costs per portion, and menu prices to the nearest cent.*

a) Recipe – Crème Anglaise (Portions = 10, Portion size = 162 mL)

Ingredients	Quantity of Each Ingredient
Homogenized Milk	800 mL
Heavy Cream	400 mL
Yolk (Egg)	180 mL
White Sugar	216 g
Vanilla Bean Powder	10 g

b) Recipe – Egg Salad (Portions = 3, Portion Size = 177 mL)

Ingredients	Quantity of Each Ingredient
Large Eggs	8 eggs
Mayonnaise	120 mL
Shallot	14 g
Celery	12 g
White Pepper	1.5 g
Iodized Salt	4 g

c) Recipe – Gravlax (Portions = 8, Portion Size = 100 g)

Ingredients	Quantity of Each Ingredient
Salmon (head off)	0.91 kg
Coarse Kosher Salt	41 g
White Sugar	38 g
Black Peppercorn	8.5 g
Dill Weed (Fresh)	50 g
Beet Juice	60 mL

d) Recipe – Potato and Celeriac Purée (Portions = 8, Portion Size = 150 mL)

Ingredients	Quantity of Each Ingredient
Russet Potatoes	0.46 kg
Celeriac	250 g
Unsalted Butter	85 g
Heavy Cream	60 mL
Iodized Salt	21 g

Answers to Problem Set 2

a)

	A	B	C	D	E	F	G	H	I	J
1	**Crème Anglaise**									
2										
3	Portions	10								
4	Portion Size	162 mL			Food Cost %	25				
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7	Homogenized Milk	800 mL	$37.83	12	1 L	1000 mL	$0.00315/mL	1	$0.00315/mL	$2.52
8	Heavy Cream	400 mL	$98.77	12	1 L	1000 mL	$0.00823/mL	1	$0.00823/mL	$3.29
9	Yolk (Egg)	180 mL	$21.56	5	500 mL	500 mL	$0.00862/mL	1	$0.00862/mL	$1.55
10	White Sugar	216 g	$44.38	1	20 kg	20000 g	$0.00222/g	1	$0.00222/g	$0.48
11	Vanilla Bean Powder	10 g	$21.99	2	50 g	50 g	$0.21990/g	1	$0.21990/g	$2.20
12									**Total Recipe Cost**	$10.04
13									**Cost Per Portion**	$1.00
14									**Menu Price**	$4.02

b)

	A	B	C	D	E	F	G	H	I	J
1	**Egg Salad**									
2										
3	Portions	3								
4	Portion Size	177 mL			Food Cost %	25				
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7	Large Eggs	8 eggs	$65.34	1	15 dozen	180 eggs	$0.36300/egg	1	$0.36300/egg	$2.90
8	Mayonnaise	120 mL	$70.22	2	4 L	4000 mL	$0.00878/mL	1	$0.00878/mL	$1.05
9	Shallot	14 g	$30.66	10	1 lb	454 g	$0.00676/g	0.89	$0.00759/g	$0.11
10	Celery	12 g	$27.00	9	1 .5 lb	680 g	$0.00441/g	0.75	$0.00588/g	$0.07
11	White Pepper	1.5 g	$42.40	1	596 g	596 g	$0.07114/g	1	$0.07114/g	$0.11
12	Iodized Salt	4 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.01
13									**Total Recipe Cost**	$4.25
14									**Cost Per Portion**	$1.42
15									**Menu Price**	$5.66

c)

	A	B	C	D	E	F	G	H	I	J
1	**Gravlax**									
2										
3	Portions	8								
4	Portion Size	100 g			Food Cost %	25				
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7	Salmon (head off)	0.91 kg	$25.23	1	10 lb	4.5 kg	$5.56226/kg	0.65	$8.55733/kg	$7.79
8	Coarse Kosher Salt	41 g	$25.50	1	10 kg	10000 g	$0.00255/g	1	$0.00255/g	$0.10
9	White Sugar	38 g	$44.38	1	20 kg	20000 g	$0.00222/g	1	$0.00222/g	$0.08
10	Black Peppercorn	8.5 g	$123.83	1	2.27 kg	2270 g	$0.05455/g	1	$0.05455/g	$0.46
11	Dill Weed (Fresh)	50 g	$71.08	24	2 oz	56.7 g	$0.05223/g	0.56	$0.09328/g	$4.66
12	Beet Juice	60 mL	$44.60	1	5 L	5000 mL	$0.00892/mL	1	$0.00892/mL	$0.54
13									**Total Recipe Cost**	$13.64
14									**Cost Per Portion**	$1.70
15									**Menu Price**	$6.82

d)

	A	B	C	D	E	F	G	H	I	J
1	**Potato & Celeriac Purée**									
2										
3	Portions	8								
4	Portion Size	150 mL			Food Cost %	25				
5										
6	**Ingredient**	**Ingredient Quantity**	**AP Cost**	**# of Units**	**Unit Quantity**	**Converted Unit Quantity**	**Cost Per Unit**	**Yield Factor**	**EP Cost**	**Ingredient Cost**
7	Russet Potatoes	0.46 kg	$30.23	50	1 lb	0.5 kg	$1.33291/kg	0.81	$1.64557/kg	$0.76
8	Celeriac	250 g	$49.99	10	2 lb	907 g	$0.00551/g	0.75	$0.00735/g	$1.84
9	Unsalted Butter	85 g	$305.26	40	454 g	454 g	$0.01681/g	1	$0.01681/g	$1.43
10	Heavy Cream	60 mL	$98.77	12	1 L	1000 mL	$0.00823/mL	1	$0.00823/mL	$0.49
11	Iodized Salt	21 g	$40.30	24	1 kg	1000 g	$0.00168/g	1	$0.00168/g	$0.04
12									**Total Recipe Cost**	$4.55
13									**Cost Per Portion**	$0.57
14									**Menu Price**	$2.28

Mock Order Activity

For this activity, you're expected to contact a wholesale food supplier or purveyor and place a mock order for a list of recipe ingredients from any two of the recipes you costed in the previous problem sets. The purpose of this activity is threefold: to practice the communication skills required for working in food services, to familiarize yourself with the process of placing a wholesale food order and to understand how to obtain realistic prices to cost recipes.

The process to place an order may differ from supplier to supplier, but the description of this activity will prepare you for what to likely expect in the process. Please note, this activity may require you demonstrate the skills of adaptability and creativity, in order to complete it accurately.

Follow the instructions below to complete this activity.

- First, you'll need to contact a local food supplier, like as Sysco or Flanagan's. You can use the internet to perform a search for a local wholesale food supplier in your area, and you can find contact information on the company website. Contact the company via phone or email. You may want to rehearse with your instructor before contacting the company.

- In your phone conversation or email communication, let the company representative know that you're an upgrading student at a local college and that you are interested in working in the food service industry. Communicate to the customer service representative that you're working on a school assignment which requires you to obtain a price quote from a local wholesale food supplier. Ask if it is possible to be put in contact with a sales representative.

- Once you've received the contact information, contact the sales representative and communicate once again that you're a student at a local college who is interested in working in the food service industry. Let him/her/them know that you're working on a recipe costing assignment which involves obtaining a price quote for ingredients from a couple of recipes.

- The representative will need to know what size of food service establishment you're ordering for since prices are dependent on the size of the order. To incentivize food service establishments to buy more, suppliers offer volume

- discounts (Labensky et al., 2006), which means reduced prices for larger orders; generally, large food service establishments require a high volume of supplies because they sell more, so they are given lower prices than small food service establishments.

- In your conversation with the sales representative, describe your hypothetical food service establishment as a small operation, so the price quote should coincide with the minimum volume required to place an order, approximately $2,000 to $4,000. Next, provide the representative with the list of ingredients you would like quoted; quantities are not necessary since the representative should give you as purchased costs based on a minimum order. Remember, the company representatives are doing you a favour, so be polite, friendly, and thankful during your conversations.

- Once you receive the price quote from the sales representative, show the price quote to your educator. On the next page is a checklist you can use to complete this activity.

Mock Order Activity Checklist

I have…	**Yes**	**No**
compiled a list of ingredients from two recipes that I've costed in this resource	☐	☐
chosen a local food supplier or purveyor to contact	☐	☐
contacted the company, described the assignment, and asked to speak with a sales representative	☐	☐
obtained the contact information of the sales representative	☐	☐
contacted the sales representative and explained the assignment	☐	☐
communicated to the sales representative that I'm placing a mock order for a small food service establishment	☐	☐
asked the sales representative for a price quote for the ingredient list that I've compiled	☐	☐
provided the ingredient list to the sales representative	☐	☐
retrieved the price quote from the sales representative via email or some other means	☐	☐
shown the price quote to my professor/teacher/instructor	☐	☐
been polite, friendly, and thankful in all my communications throughout this activity	☐	☐

Mock Order Activity Scoring Instructions

Learner Name: _____ Date: _____

Evaluation Criteria	**Yes**	**Partly**	**No**
Compiles a list of ingredients from two recipes costed in this resource	☐	☐	☐
Chooses a local food supplier or purveyor to contact	☐	☐	☐
Contacts the company, describes the assignment to the customer service representative, and asks to speak to a sales representative	☐	☐	☐
Obtains the contact information of the sales representative	☐	☐	☐
Contacts the sales representative and explains the assignment	☐	☐	☐
Communicates to the sales representative that the mock order is, hypothetically, for a small food service establishment	☐	☐	☐
Asks the representative for a price quote	☐	☐	☐
Provides the sales representative with a list of ingredients	☐	☐	☐
Retrieves the price quote from the sales representative via email or some other means	☐	☐	☐
Shows the price quote to the professor/teacher/instructor	☐	☐	☐
Displays politeness, friendliness, and thankfulness throughout all communications during the activity	☐	☐	☐
	(1 mark)	**(1/2 mark)**	

Outcome:

Each checkmark in the “Yes” column receives one mark. Each checkmark in the “Partly” column receives a half mark.

Success = at least 7/11

Total: /11	Successful: Y N

Summary

This module is the third in a five-part series meant to provide those interested in cooking and/or restaurant operations with basic theoretical knowledge pertaining to kitchen math and science. In this module, you first learned how to find total recipe cost, cost per portion, and menu price with a calculator. You then learned how to use Excel to perform these calculations. In the next module, you will learn basic kitchen science.

References

Labensky, S.R., Hause, A.M., Malley, F.L., Bevan, A., & Sicoli, S. (2006). *On cooking: A textbook of culinary fundamentals* (3rd Canadian ed.). Pearson.

Appendix A

Quick Reference Sheet

<table>
<tr><td colspan="2">

General Conversion Formula

Unit Converting From x $\frac{Unit\ Converting\ To}{Unit\ Converting\ From}$ = Unit Converting To

</td></tr>
<tr><td>

Weight Conversion Factors

Metric
1 kg = 1000 g

Metric U.S./Imperial
1 kg = 2.2 lb
28.4 g = 1 oz
454 g = 1 lb

</td><td>

Volume Conversion Factor

1 L = 1000 mL

</td></tr>
<tr><td colspan="2">

Cost Per Unit

$$Cost\ Per\ Unit = \frac{As\ Purchased\ Cost}{Number\ of\ Units\ x\ Unit\ Quantity}$$

</td></tr>
<tr><td colspan="2">

Edible Portion Cost

$$Edible\ Portion\ (EP)\ Cost = \frac{Cost\ Per\ Unit}{Yield\ Factor}$$

</td></tr>
<tr><td colspan="2">

Ingredient Cost

$$Ingredient\ Cost = Quantity\ of\ Ingredient\ x\ Edible\ Portion\ (EP)\ Cost$$

</td></tr>
<tr><td colspan="2">

Total Recipe Cost

$$Total\ Recipe\ Cost = Ingredient\ Cost\ 1 + \ Ingred\ Cost\ 2 + \cdots + Last\ Ingredient\ Cost$$

</td></tr>
<tr><td colspan="2">

Cost Per Portion

$$Cost\ Per\ Portion = \frac{Total\ Recipe\ Cost}{Number\ of\ Portions}$$

</td></tr>
<tr><td colspan="2">

Food Cost Percentage Menu Pricing

$$Menu\ Price = \frac{Cost\ Per\ Portion}{(Food\ Cost\ Percent\ /\ 100\%)}$$

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</table>

Appendix B

Number of Units, Quantity, and As Purchased Cost of Food Items (Fall 2023)

Food Item	#Of Units/Quantity & Cost	Food Item	#Of Units/Quantity & Cost
All Purpose Flour	1 bag/20kg at $30.42	Leek	24 leeks/250g for $46.13
Basil (fresh)	4 bunches/25g at $8.22	Lemon Juice	2 jugs/3.8L at $25.02
Bay Laurel	1 container/450g at $28.05	Mayonnaise	2 containers/4L at $70.22
Beet Juice	1 jug/5L at $44.60	Nutmeg	1 container/525g at $34.84
Black Peppercorn	1 container/2.72kg at $123.83	Olive Oil	4 cans/3L at $181.53
Canned Tomatoes	6 cans/2.84L at $45.16	Onion	50 onions/1lb at $33.66
Canola Oil	1 jug/16L at $55.61	Panko	1 bag/11.3kg at $45.61
Carrots	1 bag/10lb at $11.28	Red Wine	1 jug/20L at $118.73
Celeriac	10 celeriac/2lb at $49.99	Russet Potatoes	50 potatoes/1lb at $30.23
Celery	9 celery/1.5lb at $27.00	Shallot	10 shallots/1lb at $30.66
Clove	1 container/500g at $42.48	Salmon (head off)	1 fish/10lb at$25.23
Coarse Kosher Salt	1 bucket/10kg at $25.50	Tahini	6 containers/750mL at $67.41
Dijon Mustard	12 jars/325mL at $41.37	Thyme (fresh)	12 bunches/25g at $16.20
Dill Weed (fresh)	24 bunches/2oz at $71.08	Tomato Paste	24 cans/369mL at $79.88
Dried Chickpeas	1 bag/10kg at $29.65	Unsalted Beef Stock	12 cans/900mL at $75.86
Eye of Round	8 eyes/3kg at $49.66	Unsalted Butter	40 units/454g at $305.26
Fatback	2 pieces/5lb at $4.10	Vanilla Bean Powder	2 bottles/50g at $21.99

Continued…

Garlic	1 bag/3lb at $10.00	Vegetable Oil	1 jug/16L at $55.61
Heavy Cream	12 cartons/1L at $98.77	White Pepper	1 container/596g at $42.40
Homogenized Milk	12 cartons/1L at $37.83	White Sugar	1 bag/20kg at $44.38
Iodized Salt	24 boxes/1kg at $40.30	White Vinegar	4 jugs/5L at $18.57
Large Eggs	1 case/15dz at $65.34	Yolk (Egg)	5 cartons/500mL at $21.56

Appendix C

Approximate Yield Factors of Food Items

Food Item	Yield Factor	Food Item	Yield Factor
All Purpose Flour	1	Leek	0.52
Basil (fresh)	0.56	Lemon Juice	1
Bay Laurel	1	Mayonnaise	1
Beet Juice	1	Nutmeg	1
Black Peppercorn	1	Olive Oil	1
Canned Tomatoes	1	Onion	0.90
Canola Oil	1	Panko	1
Carrots	0.82	Red Wine	1
Celeriac	0.75	Russet Potatoes	0.81
Celery	0.75	Shallot	0.89
Clove	1	Salmon (head off)	0.65
Coarse Kosher Salt	1	Tahini	1
Dijon Mustard	1	Thyme (fresh)	0.40
Dill Weed (fresh)	0.56	Tomato Paste	1
Dried Chickpeas	1	Unsalted Beef Stock	1
Eye of Round	0.99	Unsalted Butter	1
Fatback	1	Vanilla Bean Powder	1

Continued…

Garlic	0.87	Vegetable Oil	1
Heavy Cream	1	White Pepper	1
Homogenized Milk	1	White Sugar	1
Iodized Salt	1	White Vinegar	1
Large Eggs	1	Yolk (Egg)	1

Appendix D

Excel Measurement Conversion Abbreviations

Measurement Unit	Excel Abbreviation
Gram	g
Kilogram	kg
Ounce	ozm
Pound	lbm
Millilitre	ml
Litre	l
Gallon	gal
Quart	qt
Pint	pt
Cup	cup
Fluid Ounce	oz
Tablespoon	tbs
Teaspoon	tsp