



Appendixes

Food Buying Guide for Child Nutrition Programs

A Appendix

Instructions: How to use the Recipe Analysis Workbook

The Recipe Analysis Workbook is a tool used to determine the expected meal pattern contribution and crediting statement for a recipe. The Recipe Analysis Workbook consists of a worksheet for each meal component. The worksheets, in hard copy format, are located at the end of this Appendix, Figures 1a-1g. This workbook is a tool for calculating the meal pattern contribution of a recipe's ingredients toward the vegetable (expressed in subgroups), fruit, meats/meat alternates, and grains components of the Federal meal pattern requirements. The fluid milk component is not included. The Recipe Analysis Workbook is also available in a spreadsheet format upon request to the CNP-NTAB mailbox at cnpntab@fns.usda.gov and an interactive, web-based Recipe Analysis Workbook is available at <https://foodbuyingguide.fns.usda.gov>. Use of this workbook in the spreadsheet or web-based format is recommended to obtain the maximum benefit; however, the examples in this appendix are tailored to both the spreadsheet and hard copy format for your convenience.

Determining meal pattern contributions for recipes is an important step in ensuring that meals served are nutritious and meet Federal meal pattern requirements. The Recipe Analysis Workbook provides the specifics for determining the meal pattern contribution of a recipe served in the National School Lunch Program (NSLP) and School Breakfast Program (SBP). The information may also be used to determine the meal pattern contribution of recipes served in the Child and Adult Care Food Program (CACFP), Summer Food Service Program (SFSP), and NSLP Afterschool Snack Service. The total amount from each of the vegetable subgroups can be combined to determine the vegetable component for the CACFP meal pattern.

The total amount from the fruit and vegetable subgroups can be combined to determine the vegetable/fruit component for the SFSP and NSLP Afterschool Snack Service. While the SFSP and NSLP Afterschool Snack Service are not required to calculate grain items using ounce equivalents, ounce equivalents may be used.

The following text outlines steps for completing the Recipe Analysis Workbook. Note, if your recipe does not contain an ingredient for a component, you will not complete that worksheet.

Tips for Completing the Workbook:

- Use a calculator.
- Record calculations out to four decimal places without rounding.

Steps to complete the Recipe Analysis Workbook (Figures 1a-1g)

1. Recipe Name

Record the name of the recipe at the top of each worksheet.

2. Servings per Recipe

At the top of each worksheet, record the total number of servings a recipe yields. This number will be the same for each of the component worksheets. For example, if your recipe yields 100 servings, enter "100" in this space.

A | Appendix

3. Recipe Number

If your recipe is numbered, record the number at the top of each worksheet, otherwise, leave it blank.

4. Serving size

Record the serving amount per portion (e.g. 1/2 cup, 1 piece, 1 sandwich, 3/4 cup, etc.) on each worksheet.

5. Ingredients

In Column (a), list the creditable recipe ingredients as found in the Food Buying Guide For Child Nutrition Programs (FBG) on each applicable meal component worksheet. If an exact match is not available, choose a food item in the FBG that closely matches your recipe ingredient. Do not list ingredients that do not contribute to a meal component, such as oils, spices, and herbs.

6. Quantity of Ingredient

In Column (b), record the weight or volume measure of each ingredient in the same unit of measure as the purchase unit listed in the FBG. The quantity specified on the worksheet must be in the same unit as specified under “Purchase Unit,” Column 2 of the FBG. For example, when the purchase unit in Column 2 of the FBG is listed in pounds, convert the ounces of your ingredient to the decimal equivalent of a pound and record this number. (See “Decimal Weight Equivalents” Table 5 on page I-20 in the FBG).

See Page A-31 for instructions on completing the grains component.

7. Preparation Yield

In Column (c), record the preparation yield factor for the ingredient that is provided in “Additional Information,” Column 6 of the FBG. The preparation yield factor should only be used when a recipe ingredient needs to be converted to match the form of the item as listed under “Food As Purchased,” Column 1 of the FBG.

For example, a recipe contains 10 pounds of eggplant, raw, pared, cubed but the FBG only provides data for eggplant, fresh whole in the “Food As Purchased,” Column 1.

Convert the weight of the eggplant, raw, pared, cubed to the weight of eggplant, fresh whole to determine the amount of eggplant to purchase.

In the FBG, “Additional Information,” Column 6 for eggplant, fresh whole states, “1 lb AP = 0.81 lb ready-to-cook eggplant,” meaning that 1 lb as purchased fresh, whole eggplant yields 0.81 lb of ready-to-cook eggplant after it has been peeled and cubed.

Record the 0.81 preparation yield factor in Column (c).

If several options are available in “Additional Information,” Column 6, choose the yield data that most closely matches the form of the recipe ingredient.

8. Calculated Quantity to Purchase

In Column (d), record the answer from dividing the number in Column (b) by the number in Column (c). Continuing with the eggplant example above, the calculation is as follows:

- Record 10 lb in Column (b), “Quantity of Ingredient”
- Record 0.81 lb in Column (c), “Preparation Yield Column 6 in FBG”
- Divide: $10 \text{ lb} \div 0.81 \text{ lb} = 12.3456 \text{ lb}$

- Record “12.3456” in Column (d), “Calculated Quantity to Purchase”
- 12.3456 lb of fresh, whole eggplant needs to be purchased for the recipe in order to yield 10 lb of eggplant, raw, pared, cubed.

For other examples using “Additional Information,” Column 6 yield data, see calculation examples from Method 3 on pages I-43 through I-45 of the FBG. You may also refer to Appendix B: How to Use Column 6 in the FBG for further information on determining yields of prepared/ready-to-serve/ready-to-cook ingredients.

9. Servings per Purchase Unit

In Column (e), record the number of servings per purchase unit of the ingredient. This information is found in “Servings per Purchase Unit,” Column 3 of the FBG. The number of servings per purchase unit varies for different preparation methods or forms of the ingredients as served. Therefore, you should pay particular attention to the description of the food as served when selecting the number of servings per purchase unit to use in the calculation. The description of the form of the food should most closely match that of the food after preparation and as it is served. For example, if a recipe ingredient is Cauliflower, fresh, florets, ready-to-use and the cauliflower is then cooked when preparing the recipe, use the information in “Servings per Purchase Unit,” Column 3 of the FBG for cooked, drained vegetable florets, which is 14.1.

10. Totals

In Column (f), record the answer of Column (b) multiplied by Column (e) OR Column (d) multiplied by Column (e), if a preparation yield factor is used. After calculating this amount for each ingredient, add the amounts together and enter the sum in the Totals space at the bottom of each worksheet.

To finish the remaining calculations, see the following specific instructions for a complete example of each meal component.

A | Appendix

Completing Meal Component Worksheets

Now that we have covered the basics of using the Recipe Analysis Workbook, let's practice with the following recipe examples. Ingredients listed below in red are creditable and contribute to the meal pattern requirements.

Porcupine Sliders (turkey burgers), 50 servings

Ingredients	Weight	Measure
Water		3-1/2 cups
Brown rice, long grain, regular, dry	9-1/2 oz	1-1/2 cups
Canola oil		2 Tbsp
Fresh onions, diced	6 oz	1-1/4 cups
Fresh celery, diced	14 oz	3 cups
Fresh garlic, minced	2-1/2 oz	1/4 cup
Raw ground turkey, lean	6 lb 15-1/2 oz	3 qt 2 cups
Liquid, whole egg		2-1/2 cups
Dried cranberries, chopped	12 oz	2-1/2 cups
Fresh baby spinach, chopped	10 oz	2 qt
Worcestershire sauce		2 Tbsp
Salt		1 Tbsp
Ground black pepper		1 Tbsp 1 tsp
Ground white pepper		1/2 tsp
Mini whole grain rolls (1 oz each)		50



Harvest Delight (vegetable and fruit side dish), 50 servings

Ingredients	Weight	Measure
Fresh carrots, 1/4" slices	3 lb	2 qt 2 cups
Fresh sweet potatoes, peeled, cubed 1"	3 lb	1 qt 2 cups
Fresh butternut squash, peeled, cubed 1/2"	3 lb	1 qt 2-2/3 cups
Fresh red onions, diced	1 lb	3 cups 2 Tbsp
Extra virgin olive oil		2/3 cup
Sea salt		2 tsp
Fresh green apples, peeled, cubed 1/2"	4 lb	3 qt 2-2/3 cups
Fresh thyme, finely chopped		3 Tbsp
Fresh oregano, finely chopped		3 Tbsp
Fresh sage, finely chopped		3 Tbsp
Fresh rosemary, finely chopped		2 Tbsp
Minced garlic		2 Tbsp 1 tsp
Maple syrup		1/4 cup 1 Tbsp
Fresh spinach, coarsely chopped	11 oz	1 qt 2 cups
Dried cranberries, finely chopped	2 oz	1/3 cup



A | Appendix

Confetti Soup (vegetable, bean and turkey ham soup), 50 servings

Ingredients	Weight	Measure
Canola oil		1/4 cup 1 Tbsp
Fresh onions, diced	1 lb 14 oz	1 qt 2 cups
Fresh celery, diced	1 lb 14 oz	1 qt 2 cups
Fresh carrots, diced	1 lb 14 oz	1 qt 2 cups
Salt		1 Tbsp 1 tsp
Ground black pepper		1 Tbsp 1 tsp
Fennel seed, whole		2 tsp
Crushed red pepper (optional)		1 tsp
Canned low-sodium black-eyed peas, drained, rinsed	5 lb 10 oz	3 qt 1 cup (1-1/3 No. 10 cans) or 1 gal
Water		1 gal 3 qt
Turkey Ham, extra-lean, diced 1/4"	3 lb	1 qt 2-1/2 cups
Fresh kale, coarsely chopped	4 oz	2-1/2 cups
Fresh parsley, finely chopped		2/3 cup



Vegetable (with Subgroups) Contribution Worksheet (Figure 1a)

Calculate the vegetable (with subgroups) contribution per serving. Follow these steps:

- Record the ingredient under the appropriate vegetable subgroup heading in “Ingredients,” Column (a).

EXAMPLE: The Porcupine Sliders recipe contains fresh baby spinach, chopped. List this ingredient on the worksheet under the Dark Green vegetable subgroup in Column (a), as shown.

Recipe Name:		Porcupine Sliders					Servings per Recipe:		50	
Recipe Number:		Sandwiches F-10r					Serving Size:		1 slider	
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)	
Dark Green										
Fresh baby spinach, chopped										
Dark Green Totals										

- Enter the ingredient quantity in the “Quantity of Ingredient,” Column (b) using the same weight or volume unit found in the “Purchase Unit,” Column 2 in the FBG. If the recipe lists the ingredient in a different unit, you must make a conversion before the contribution can be calculated.

EXAMPLE: The Porcupine Sliders recipe contains 10 oz fresh baby spinach, chopped; 6 oz fresh onions, diced; and 14 oz fresh celery, diced. The FBG lists the Purchase Unit as “Pound” for these items; therefore, they are converted from ounces to pounds and listed on the worksheet in Column (b), as shown.

Recipe Name:		Porcupine Sliders					Servings per Recipe:		50	
Recipe Number:		Sandwiches F-10r					Serving Size:		1 slider	
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)	
Dark Green										
Fresh baby spinach, chopped	0.62500		10 oz ÷ 16 oz/lb = 0.6250 lb							
Dark Green Totals										
Other										
Fresh onions, diced	0.37500		6 oz ÷ 16 oz/lb = 0.3750 lb							
Fresh celery, diced	0.87500		14 oz ÷ 16 oz/lb = 0.8750 lb							
Other Totals										

For canned items, find the appropriate can size in the FBG and/or convert the ingredient quantity to pounds or ounces.

A | Appendix

EXAMPLES FOR CANNED INGREDIENTS:

a. If your stew recipe contains one (1) No. 10 can of diced tomatoes in juice, enter “1” in Column (b), as shown. Do not enter 102 oz (the weight of the No. 10 can). To continue, proceed to section 5, “Examples for canned ingredients” for instructions on how to enter the Servings per Purchase Unit in Column (e).

Recipe Name:		Canned Tomato Example					Servings per Recipe:			
Recipe Number:							50			
							Serving Size:			
							1 cup			
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)	
Red/Orange										
Canned tomatoes, diced, in juice	1.00000									
Red/Orange Totals										

b. If your recipe requires a different amount (either more or less) of a canned, drained ingredient than is contained in a No. 10 can, you must determine how many cans you need. First, enter the ingredient amount in Column (b).

The Confetti Soup recipe contains 5 lb 10 oz of canned low-sodium black-eyed peas, drained, rinsed. Convert this amount to ounces: 90 oz. The FBG lists the Purchase Unit as “No. 10 can (108 oz)” and “No. 300 can (15 oz)” for this canned item; hence, the ingredient was converted from pounds to ounces to match the purchase unit and listed on the worksheet in Column (b), as shown.

Recipe Name:		Confetti Soup					Servings per Recipe:			
Recipe Number:		H-09r					50			
							Serving Size:			
							1 cup			
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)	
Beans/Peas (Legumes)										
Canned low-sodium black-eyed peas, drained, rinsed	90.00000		(5 lb x 16 oz/lb) + 10 oz = 90 oz							
Beans/Peas (Legumes) Totals										

c. If your recipe contains 40 oz of canned pumpkin that is served heated, and the purchase unit is in pounds, then convert the ounces to pounds as listed on the worksheet in Column (b), shown. To continue, proceed to section 5, “Examples for canned ingredients” for instructions on how to enter the Servings per Purchase Unit in Column (e).

Recipe Name:		Canned Pumpkin Example					Servings per Recipe:		50
Recipe Number:							Serving Size:		1/2 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Red/Orange									
Canned pumpkin	2.50000		40 oz ÷ 16 oz/lb = 2.50 lb						
Red/Orange Totals									

3. Record the preparation yield factor in “Preparation Yield,” Column 6 in FBG, Column (c) for any vegetable ingredients that need to be converted to match the form of the item as listed under “Food as Purchased,” Column 1 of the FBG.

EXAMPLE: The Harvest Delight recipe contains 3 lb each of fresh carrots, 1/4 inch slices; fresh sweet potatoes, peeled, cubed 1 inch; and fresh, butternut squash, peeled, cubed 1/2 inch. The carrots, sweet potatoes, and butternut squash are purchased in their whole form; hence, use the preparation yield factor in Column 6 of the FBG for these three ingredients. The preparation yield factor in the FBG for these ingredients is as follows:

- Carrots, fresh, without tops is 1 lb AP = 0.83 lb (about 2-2/3 cups) trimmed, peeled, sliced carrots
- Sweet Potatoes, fresh, whole is 1 lb AP = 0.80 lb peeled, ready-to-cook sweet potato
- Squash, Winter, fresh Butternut whole is 1 lb AP = 0.84 lb ready-to-cook pared squash

Recipe Name:		Harvest Delight					Servings per Recipe:		50
Recipe Number:		Vegetables I-21r					Serving Size:		1/2 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Red/Orange									
Fresh carrots, 1/4" slices	3.00000	0.83000							
Fresh sweet potatoes, peeled, cubed 1"	3.00000	0.80000	Preparation yield is entered in Column (c)						
Fresh butternut squash, peeled, cubed 1/2"	3.00000	0.84000							
Red/Orange Totals									

EXAMPLE FOR CANNED INGREDIENTS: The Confetti Soup recipe contains 90 oz of canned low-sodium black-eyed peas, drained, rinsed. Use the preparation yield factor to determine the amount of drained black-eyed peas provided by a No. 10 can. The preparation yield factor in Column 6 in the FBG is as follows: 1 No. 10 can = about 65.0 oz (9-3/8 cups) heated, drained beans.

A | Appendix

Recipe Name:		Confetti Soup					Servings per Recipe:		50
Recipe Number:		H-09r					Serving Size:		1 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Beans/Peas (Legumes)									
Canned low-sodium black-eyed peas, drained, rinsed	90.00000	65.00000							
Preparation yield is entered in Column (c)									
Beans/Peas (Legumes) Totals									

- Calculate the quantity of each ingredient to purchase, if a preparation yield factor was used, and record the answer in “Calculated Quantity to Purchase,” Column (d). This calculation is shown for the Harvest Delight.

Recipe Name:		Harvest Delight					Servings per Recipe:		50
Recipe Number:		Vegetables I-21r					Serving Size:		1/2 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Red/Orange									
Fresh carrots, 1/4" slices	3.00000	0.83000	3.61446					0.000	
Fresh sweet potatoes, peeled, cubed 1"	3.00000	0.80000	3.75000						
Fresh butternut squash, peeled, cubed 1/2"	3.00000	0.84000	3.57143						
$3.0000 \div 0.8300 = 3.6144$ $3.0000 \div 0.8000 = 3.7500$ $3.0000 \div 0.8400 = 3.5714$									
Red/Orange Totals									

EXAMPLE FOR CANNED INGREDIENT: For the Confetti Soup recipe, the calculation will provide the number of No. 10 cans of black-eyed peas to purchase.

Recipe Name:		Confetti Soup					Servings per Recipe:		50
Recipe Number:		H-09r					Serving Size:		1 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Beans/Peas (Legumes)									
Canned low-sodium black-eyed peas, drained, rinsed	90.00000	65.00000	1.38462						
$90.0000 \div 65.0000 = 1.3846$ You will need to open 2 cans of black-eyed peas.									
Beans/Peas (Legumes) Totals									

- Enter the Servings per Purchase Unit in Column (e) for each ingredient, using the “Servings per Purchase Unit, EP,” Column 3 of the FBG.

EXAMPLE: The Harvest Delight recipe contains 11 oz of fresh spinach, coarsely chopped that will be added to the roasted mixture and served. “Servings per Purchase Unit, EP,” Column 3 of the FBG lists three options for spinach, fresh, partly trimmed: 30.7, 20.4, and 7.60. By looking at the next Column in the FBG, “Serving Size per Meal Contribution,”

Column 4, 30.7 refers to 1/4 cup raw, chopped vegetable, 20.4 refers to 1/4 cup vegetable with dressing, and 7.60 refers to 1/4 cup cooked, drained vegetable. Since the spinach is heated by the roasted mixture when served, 7.60 is the closest option to the form served. 7.60 is entered in the “Servings per Purchase Unit Column 3 in the FBG,” Column (e), as shown.

Recipe Name:		Harvest Delight						Servings per Recipe:		50
Recipe Number:		Vegetables I-21r						Serving Size:		1/2 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)	
Dark Green										
Fresh spinach, coarsely chopped	0.68750	0.88000	0.78125	7.60000						
Dark Green Totals										

EXAMPLES FOR CANNED INGREDIENTS:

a. Referring back to the canned tomato ingredient that will be added to a stew in Section 2, the entire content of the can is used since the recipe contains diced tomatoes in juice; therefore, a preparation yield is not utilized and Columns (c) and (d) are left blank. Now determine the servings per purchase unit. In the FBG, “Servings per Purchase Unit, EP,” Column 3 lists one option for a No. 10 can of Tomatoes, canned Diced: 49.2. By looking at the next Column in the FBG, “Serving Size per Meal Contribution,” Column 4, 49.2 refers to servings of 1/4 cup heated, vegetable and juice, so a No. 10 can provides 49.2 1/4 cup servings of heated, diced tomatoes in juice. Enter this amount in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e), as shown.

Recipe Name:		Canned Tomato Example						Servings per Recipe:		50
Recipe Number:								Serving Size:		1 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)	
Red/Orange										
Canned tomatoes, diced, in juice	1.00000			49.20000						
Red/Orange Totals										

b. For the Confetti Soup recipe, canned black-eyed peas, drained, rinsed are added to the soup mixture and cooked. There is only one option for a No. 10 can of beans, black-eyed (or peas), dry, canned in the FBG: 37.7. Enter 37.7 in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e), as shown.

A | Appendix

Recipe Name:		Confetti Soup					Servings per Recipe:		50
Recipe Number:		H-09r					Serving Size:		1 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c)= (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e)= OR (d) x (e)= (f)	Convert to cups (f) ÷ 4= (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings= (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Beans/Peas (Legumes)									
Canned low-sodium black-eyed peas, drained, rinsed	90.00000	65.00000	1.38462	37.70000					
Beans/Peas (Legumes) Totals									

c. Referring back to the canned pumpkin example in Section 2, after converting the ounces to pounds the next step is to find the “Servings per Purchase Unit, EP,” Column 3 of the FBG for a pound of pumpkin, canned, which is 7.77. By looking at the next column in the FBG, “Serving Size per Meal Contribution,” Column 4, 7.77 refers to 1/4 cup heated vegetable. So, a pound provides 7.77 1/4 cup servings of heated pumpkin. Enter 7.77 in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e), as shown:

Recipe Name:		Canned Pumpkin Example					Servings per Recipe:		50
Recipe Number:							Serving Size:		1/2 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c)= (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e)= OR (d) x (e)= (f)	Convert to cups (f) ÷ 4= (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings= (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Red/Orange									
Canned pumpkin	2.50000			7.77000					
Red/Orange Totals									

- Enter the total number of 1/4 cups for each ingredient by multiplying the numbers in Columns (b) and (e), if a preparation yield is not utilized, or multiplying the numbers in Columns (d) and (e), if a preparation yield is used.

EXAMPLE: For the fresh spinach in the Harvest Delight recipe, a preparation yield was used, so the number in Column (d) is multiplied by the number in Column (e). This calculation is shown:

Recipe Name:		Harvest Delight					Servings per Recipe:		50
Recipe Number:		Vegetables I-21r					Serving Size:		1/2 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c)= (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e)= OR (d) x (e)= (f)	Convert to cups (f) ÷ 4= (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings= (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Dark Green									
Fresh spinach, coarsely chopped	0.68750	0.88000	0.78125	7.60000	5.93750				
						0.7812 x 7.6000 = 5.9375			
Dark Green Totals									

A | Appendix

Recipe Name: Confetti Soup		Servings per Recipe: 50							
Recipe Number: H-09r		Serving Size: 1 cup							
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Beans/Peas (Legumes)									
Canned low-sodium black-eyed peas, drained, rinsed	90.00000	65.00000	1.38462	37.70000	52.20000	1.3846 x 37.7000 = 52.2000			
Beans/Peas (Legumes) Totals					52.20000				

The total 1/4 cups for each vegetable subgroup for the Confetti Soup recipe is then totaled, which is 52.2000 for the Beans/Peas (Legumes) subgroup, as circled above.

c. Using the canned pumpkin example, which does not use a preparation yield, the number in Column (b) is multiplied by the number in Column (e).

Recipe Name: Canned Pumpkin Example		Servings per Recipe: 50							
Recipe Number:		Serving Size: 1/2 cup							
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Red/Orange									
Canned pumpkin	2.50000			7.77000	19.42500	2.5000 x 7.7700 = 19.4250			
Red/Orange Totals					19.42500				

The total 1/4 cups for the canned pumpkin example is then totaled, which is 19.4250 for the Red/Orange subgroup, as circled above.

- Calculate the number of cups for each vegetable subgroup and record this number in "Convert to cups," Column (g). This calculation is done by dividing the number of 1/4 cups in Column (f) by four to determine the number of whole cups, as shown.

Recipe Name: Porcupine Sliders		Servings per Recipe: 50							
Recipe Number: Sandwiches F-10r		Serving Size: 1 slider							
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings = (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Dark Green									
Fresh baby spinach, chopped	0.62500			12.60000	7.87500	7.8750 ÷ 4 = 1.9687			
Dark Green Totals					7.87500	1.96875			

A | Appendix

EXAMPLE 2: One portion of the Harvest Delight recipe provides 0.4520 cups of vegetable from the Red/Orange subgroup. This amount is listed in “Total Cups of Vegetables per Serving,” Column (h). Using Table 7 on page I-21, 0.4520 falls within the decimal equivalent range of 0.375 and 0.499, so record the lower number of the range, 0.375, in Column (i) as the nearest portion of a cup, or if using the Recipe Analysis Workbook spreadsheet, use the drop-down menu in Column (i) to convert the decimal equivalent of 0.4520 to the nearest portion of a cup as shown.

Recipe Name:		Harvest Delight					Servings per Recipe:		50
Recipe Number:		Vegetables I-21r					Serving Size:		1/2 cup
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c)= (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e)= OR (d) x (e)= (f)	Convert to cups (f) ÷ 4= (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings= (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Remaining (j)
Fresh carrots, 1/4" slices	3.00000	0.83000	3.61446	8.16000	29.49398		0.4520 is between 0.375 and 0.499; therefore, the carrots, sweet potatoes, and butternut squash provide 3/8 cup red/orange vegetable.		
Fresh sweet potatoes, peeled, cubed 1"	3.00000	0.80000	3.75000	9.10000	34.12500				
Fresh butternut squash, peeled, cubed 1/2"	3.00000	0.84000	3.57143	7.50000	26.78571				
Red/Orange Totals					90.40469	22.60117	0.45202	0.375-0.499 (3/8 cup ▼)	

In this example, using Table 7, the amount of fresh carrots, fresh sweet potatoes, and fresh butternut squash in the recipe provides 3/8 cup vegetable credit for the Red/Orange subgroup. Record this amount in Column (j), or if using the Recipe Analysis Workbook spreadsheet, this amount is listed with the nearest portion of a cup from the drop-down menu in Column (i), as shown above.

- Determine if there is any remaining amount of vegetables and record this amount in “Remaining,” Column (k) or Column (j) if using the Recipe Analysis Workbook spreadsheet. You will calculate this remaining amount by subtracting the lower value in the decimal equivalent range in Column (i) from the “Total Cups Vegetable per Serving,” Column (h). Remaining amounts from the Dark Green, Red/Orange and Other vegetable subgroups are added together to provide an extra Other vegetable credit, if the total is enough to provide at least the minimum 1/8 cup credit. If there is a remaining amount for the Starchy subgroup, it may contribute only to the Additional vegetable subgroup.

Please note that for the CACFP, add the total amounts from all vegetable subgroups to determine the total amount of vegetable provided in a recipe. For recipes served in the SFSP and the NSLP Afterschool Snack Service that contain both vegetables and fruit, add the total amount of vegetable to the total amount of fruit to determine the total fruit and vegetable credit for that recipe.

EXAMPLE: For the Harvest Delight recipe, there are remaining amounts for the Red/Orange and Other vegetable subgroups. The remaining amounts are added together to determine if they can contribute to the Other vegetable subgroup. In this example, the remaining amounts provide 1/8 cup Other vegetable credit, as shown.

A | Appendix

Fruit Contribution Worksheet (Figure 1b)

Follow these steps to calculate the fruit contribution per serving:

1. Record the name of the ingredient in the “Ingredients,” Column (a).

EXAMPLE: The Harvest Delight recipe contains fresh green apples, peeled, cubed 1/2 inch and dried cranberries, finely chopped. List these ingredients on the worksheet in Column (a), as shown.

Recipe Name: Harvest Delight				Servings per Recipe: 50			
Recipe Number: Vegetables I-21r				Serving Size: 1/2 cup			
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Fruit per Serving (g) ÷ No. of Servings = (h)
Fresh green apples, cubed 1/2"							
Dried cranberries, finely chopped							

2. Enter the ingredient quantity in the “Quantity of Ingredient,” Column (b) using the same weight or volume unit found in the “Purchase Unit,” Column 2 in the FBG. If the recipe lists the ingredient in a different unit, you will convert the quantity to that unit before calculating the meal pattern contribution.

EXAMPLE: The Harvest Delight recipe contains 4 lb fresh green apples, peeled, cubed, 1/2 inch and 2 oz of dried cranberries, finely chopped. The FBG lists the Purchase Unit as “Pound” for apples, fresh; therefore, no conversion is needed. However, in the FBG, the Purchase Unit for cranberries, dehydrated is also “Pound,” so the 2 oz are converted to pounds. Both ingredients are then listed on the worksheet in Column (b), as shown.

Recipe Name: Harvest Delight				Servings per Recipe: 50			
Recipe Number: Vegetables I-21r				Serving Size: 1/2 cup			
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total: 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Fresh green apples, cubed 1/2"	4.00000						
Dried cranberries, finely chopped	0.12500						

2 oz ÷ 16 oz/lb = 0.1250 lb

EXAMPLES FOR CANNED INGREDIENTS:

a. If your recipe contains one (1) No. 10 can of red tart cherries, enter “1” in Column (b) not 102 oz (the weight of a No. 10 can of cherries), as shown. Then proceed to section 5, “Examples for canned ingredients” for further instructions.

Recipe Name: Canned Cherries Example					Servings per Recipe: 50		
Recipe Number:					Serving Size: 1 cup		
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Fruit per Serving (g) ÷ No. of Servings = (h)
Canned cherries, red tart, pitted	1.00000						

b. If your recipe requires a different amount (either more or less) of a canned, drained ingredient than is provided by a No. 10 can (or other size can), you can determine how many cans you need by first entering the quantity of the ingredient in Column (b).

For example, a recipe contains 6 lb of canned peaches, cling, sliced, drained, packed in light syrup, which converts to equal 96 oz. The FBG lists the Purchase Unit as “No. 10 can (105 oz)” for this canned item; hence, this ingredient was converted from pounds to ounces and listed on the worksheet in Column (b), as shown.

Recipe Name: Canned Peaches Example					Servings per Recipe: 50		
Recipe Number:					Serving Size: 1 cup		
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Canned peaches, cling, sliced, drained, packed in light syrup	96.00000						

- Record the preparation yield factor in “Preparation Yield,” Column 6 in FBG, Column (c) for any fruit ingredients that need to be converted to match the form of the item as listed under “Food as Purchased,” Column 1 of the FBG.

EXAMPLE: The Harvest Delight recipe contains 4 lb of fresh green apples, peeled, cubed 1/2 inch. The apples are purchased in their whole form. Use the preparation yield factor in Column 6 of the FBG for the whole fresh apples in the FBG to convert the green apples to their “As Purchased” form. The only preparation yield factor in the FBG for dehydrated cranberries is in their whole form. The recipe contains chopped cranberries, but since this is not a choice in the FBG, use the preparation yield factor for whole, dehydrated cranberries. The preparation yield factor in Column 6, FBG for these ingredients is as follows:

- Apples, fresh 125-138 count Whole 1 lb AP = 0.78 lb (about 2-3/4 cups) ready-to-cook or -serve raw, cored, peeled apple.

A | Appendix

- Cranberries, dehydrated Sweetened Whole 1 lb AP = 1 lb (about 3-3/8 cups) ready-to-cook or -serve berries.

Recipe Name:		Harvest Delight			Servings per Recipe:		50
Recipe Number:		Vegetables I-21r			Serving Size:		1/2 cup
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total ¼ cups (b) x (e) = or (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Fresh green apples, peeled, cubed 1/2"	4.00000	0.78000					
Dried cranberries, finely chopped	0.12500						

Preparation yield entered in Column (c)

EXAMPLE FOR CANNED INGREDIENT: For the canned peaches example, you must use the preparation yield factor from the FBG Column 6 to calculate the quantity of No. 10 cans needed. The preparation yield factor in the FBG is as follows: 1 No. 10 can = about 72.0 oz (9 cups) drained peaches.

Recipe Name:		Canned Peaches Example			Servings per Recipe:		50
Recipe Number:					Serving Size:		1 cup
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total ¼ cups (b) x (e) = or (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Canned peaches, cling, sliced, drained, packed in light syrup	96.00000	72.00000					

Preparation yield entered in Column (c)

4. Calculate the quantity of each ingredient to purchase, if a preparation yield factor was used, and record the answer in "Calculated Quantity to Purchase," Column (d). The following calculation is for the fruit in the Harvest Delight recipe.

Recipe Name:		Harvest Delight			Servings per Recipe:		50
Recipe Number:		Vegetables I-21r			Serving Size:		1/2 cup
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total ¼ cups (b) x (e) = or (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Fresh green apples, peeled, cubed 1/2"	4.00000	0.78000	5.12821				
Dried cranberries, finely chopped	0.12500						

$4.0000 \div 0.7800 = 5.1282$

EXAMPLE FOR CANNED INGREDIENT: Continuing with the canned peaches example, the following calculation demonstrates how to determine the number of No. 10 cans of peaches to purchase.

Recipe Name: Canned Peaches Example				Servings per Recipe: 50			
Recipe Number:				Serving Size: 1 cup			
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total $\frac{1}{4}$ cups (b) x (e) = or (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Canned peaches, cling, sliced, drained, packed in light syrup	96.00000	72.00000	1.33333				
					$96.0000 \div 72.0000 = 1.3333$ cans You will need to open 2 cans of peaches.		

- Record the “Servings per Purchase Unit” in Column (e) for each ingredient, as listed in the “Servings per Purchase Unit, EP,” Column 3 of the FBG.

EXAMPLE: To determine the servings per purchase unit, choose the option that most closely matches the form in which the ingredient is served. In the Harvest Delight recipe, the fresh green apples are roasted, and the dried cranberries are mixed in to the heated mixture just prior to serving.

For the apples, the “Servings per Purchase Unit, EP,” Column 3 of the FBG lists five numerical options for apples, fresh, 125-138 count, whole. Look at the next column in the FBG, “Serving Size per Meal Contribution,” Column 4 and there is an option for “1/4 cup cored, peeled, cooked, unsweetened fruit,” which is the closest option to the form the apples in this recipe will be served. Enter 6.80, which is the number in Column 3 corresponding to this option, in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e).

For the cranberries, the “Servings per Purchase Unit, EP,” Column 3 of the FBG lists three numerical options for cranberries, dehydrated sweetened whole. By looking at the next column in the FBG, “Serving Size per Meal Contribution,” Column 4, all three options are the same (there is not a raw or cooked option). To determine the servings per purchase unit, choose the option that best corresponds to the “Purchase Unit,” Column 2 of your ingredient. In this example, 13.8 is used as the servings per purchase unit since the purchase unit was in pounds. Enter 13.8 in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e) as shown.

Recipe Name: Harvest Delight				Servings per Recipe: 50			
Recipe Number: Vegetables I-21r				Serving Size: 1/2 cup			
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total $\frac{1}{4}$ cups (b) x (e) = or (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Fresh green apples, peeled, cubed 1/2"	4.00000	0.78000	5.12821	6.80000			
Dried cranberries, finely chopped	0.12500			13.80000			

A | Appendix

EXAMPLES FOR CANNED INGREDIENTS:

a. Referring back to the canned cherries example in Section 2, the entire contents of the can are used. Therefore, a preparation yield is not needed, and Columns (c) and (d) are left blank. Next, determine the servings per purchase unit. In the FBG, “Servings per Purchase Unit, EP,” Column 3 lists two options for a No. 10 can of Cherries, Red Tart, canned, Pitted: 46.8 and 36.2. These numbers are explained in the next column in the FBG, “Serving Size per Meal Contribution,” Column 4. 46.8 refers to 1/4 cups of fruit and juice and 36.2 refers to 1/4 cups of drained fruit. Because both the cherries and juice are used in the recipe, the 46.8 1/4 cup servings of fruit and juice best match the form in which the cherries are served. Enter 46.8 in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e), as shown.

Recipe Name: Canned Cherries Example				Servings per Recipe: 50			
Recipe Number:				Serving Size: 1 cup			
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total Cups Fruit per Serving (g) ÷ No. of Servings = (h)
Canned cherries, red tart, pitted	1.00000			46.80000			

b. For the canned peaches example, the peaches are drained. “Servings per Purchase Unit, EP,” Column 3 of the FBG lists two options for Peaches, canned, Cling, Sliced, Packed in light syrup: 50.0 and 36.1. The next column in the FBG, “Serving Size per Meal Contribution,” Column 4, explains these numbers; 50.0 refers to 1/4 cups of fruit and juice and 36.1 refers to 1/4 cups of drained fruit. After the No. 10 can of peaches in your recipe is drained it will provide 36.1 1/4 cups of drained fruit. Enter 36.1 in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e), as shown.

Recipe Name: Canned Peaches Example				Servings per Recipe: 50			
Recipe Number:				Serving Size: 1 cup			
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e) = OR (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Canned peaches, cling, sliced, drained, packed in light syrup	96.00000	72.00000	1.33333	36.10000			

6. Enter the total 1/4 cups for each ingredient by multiplying the numbers in Columns (b) and (e) if a preparation yield is not utilized, or multiplying the numbers in Columns (d) and (e) if a preparation yield is used.

EXAMPLE: For the fresh green apples, a preparation yield is used, so the number in Column (d) is multiplied by the number in Column (e). However, for the dried cranberries, a preparation yield was not used, so the number in Column (b) is multiplied by the number in Column (e), as shown:

Recipe Name: Harvest Delight		Servings per Recipe: 50					
Recipe Number: Vegetables I-21r		Serving Size: 1/2 cup					
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total ¼ cups (b) x (e) = or (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Fresh green apples, peeled, cubed 1/2"	4.00000	0.78000	5.12821	6.80000	34.87179	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> $9.1492 \div 50 = 0.1829$ </div>	
Dried cranberries, finely chopped	0.12500			13.80000	1.72500		
Totals					36.59679	9.14920	0.18298
Expected Meal Pattern Contribution (Fruit - Cups)						▼	

^aAll fruits are credited based on their volume served, except that dried fruit counts as twice the volume served.

•The ingredient quantity must be entered using the same weight or volume unit found in the FBG. If the recipe lists the ingredient in a different unit, you will need to make a conversion before the contribution can be calculated.

9. Use Table 7 on page I-21 to determine the decimal equivalent to the nearest portion of a cup and record the corresponding cup amount for the fruit contribution in the Expected Meal Pattern Contribution (Fruit - Cups) field or use the drop-down menu as shown, if using the Recipe Analysis Workbook spreadsheet.

Recipe Name: Harvest Delight		Servings per Recipe: 50					
Recipe Number: Vegetables I-21r		Serving Size: 1/2 cup					
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total ¼ cups (b) x (e) = or (d) x (e) = (f)	Convert to cups (f) ÷ 4 = (g)	Total cups Fruit Per Serving (g) ÷ No. of Servings = (h)
Fresh green apples, peeled, cubed 1/2"	4.00000	0.78000	5.12821	6.80000	34.87179	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 0.1829 is between 0.125 and 0.249; therefore, the apples and cranberries provide 1/8 cup fruit. </div>	
Dried cranberries, finely chopped	0.12500			13.80000	1.72500		
Totals					36.59679	9.14920	0.18298
Expected Meal Pattern Contribution (Fruit - Cups)						0.125-0.249 (1/8 cup) ▼	

^aAll fruits are credited based on their volume served, except that dried fruit counts as twice the volume served.

•The ingredient quantity must be entered using the same weight or volume unit found in the FBG. If the recipe lists the ingredient in a different unit, you will need to make a conversion before the contribution can be calculated.

10. Record the Expected Meal Pattern Contribution for the fruit component amount on Figure 1g or the amount will self-populate if using the Recipe Analysis Workbook spreadsheet. Doing so will combine the meal pattern contribution for the fruit component with the other meal components onto one worksheet for the recipe.

- Record the preparation yield factor in "Preparation Yield," Column 6 in FBG, Column (c) for any meat/meat alternate ingredients that must be converted to match the form of the item as listed under "Food as Purchased," Column 1 of the FBG.

EXAMPLE 1: The 6.9687 lb of raw ground turkey, lean and the 1.3333 lb of liquid, whole egg are purchased in the same form as listed in the ingredients for the Porcupine Sliders recipe, so a preparation yield factor is not needed for these ingredients. Leave Column (c) on the worksheet blank, as shown:

Recipe Name:		Porcupine Sliders			Servings per Recipe:		50
Recipe Number:		Sandwiches F-10r			Serving Size:		1 slider
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total† Ounces (b) x (e) = or (d) x (e) = (f)	Ounce Eq. M/MA per Serving (f) ÷ Servings = (g)	
Raw ground turkey, lean	6.96875						
Liquid, whole egg	1.33330						

EXAMPLE 2: The 3 pounds of turkey ham are purchased in the same form as listed in the Confetti Soup recipe (it just needs to be diced), so a preparation yield factor is not used for this ingredient. However, the 90 oz of canned low-sodium black-eyed peas, drained, rinsed are purchased in an undrained form, so a preparation yield factor is required for this ingredient. The FBG preparation yield factor is as follows: 1 No. 10 can = about 65.0 oz (9-3/8 cups) heated, drained beans.

Recipe Name:		Confetti Soup			Servings per Recipe:		50
Recipe Number:		H-09r			Serving Size:		1 cup
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total† Ounces (b) x (e) = or (d) x (e) = (f)	Ounce Eq. M/MA per Serving (f) ÷ Servings = (g)	
Canned low-sodium black-eyed peas	90.00000	65.00000					
Turkey Ham, extra lean, diced 1/4"	3.00000						

- Calculate the quantity of each ingredient to purchase, if a preparation yield factor was used, and record the answer in "Calculated Quantity to Purchase," Column (d). This calculation is shown for the Confetti Soup and shows the number of No. 10 cans of black-eyed peas to purchase.

Recipe Name:		Confetti Soup			Servings per Recipe:		50
Recipe Number:		H-09r			Serving Size:		1 cup
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total† Ounces (b) x (e) = or (d) x (e) = (f)	Ounce Eq. M/MA per Serving (f) ÷ Servings = (g)	
Canned low-sodium black-eyed peas	90.00000	65.00000	1.38462				
Turkey Ham, extra lean, diced 1/4"	3.00000						

90.0000 ÷ 65.0000 = 1.3846 cans
You will need to open 2 cans of black-eyed peas.

A | Appendix

- Enter the Servings per Purchase Unit in Column (e) for each ingredient, using the “Servings per Purchase Unit, EP,” Column 3 of the FBG.

EXAMPLE: In the Confetti Soup recipe, the canned low-sodium black-eyed peas, drained, rinsed are served heated. “Servings per Purchase Unit, EP,” Column 3 of the FBG lists two options for beans, black-eyed (or peas), dry, canned whole, includes USDA Foods, 37.7 or 25.1 for a No. 10 can (108 oz). By looking at the next column in the FBG, “Serving Size per Meal Contribution,” Column 4, 37.7 refers to 1/4 cups of heated, drained beans and 25.1 refers to 3/8 cups of heated, drained beans. Since the meal contribution is based on 1/4 cup servings (1 oz equivalent of meat alternate), 37.7 is entered in the “Servings per Purchase Unit,” Column 3 in the FBG, Column (e). For the turkey ham, extra-lean, diced, 1/4 inch, Column 3 of the FBG lists two options, 9.41 or 6.27 for 1 lb. By looking at Column 4, 9.41 refers to a 1.7 oz serving (1 oz cooked turkey) and 6.27 refers to a 2.6 oz serving (1-1/2 oz cooked turkey). In this case, 9.41 is entered in the “Servings per Purchase Unit,” Column 3 in the FBG since it is based on a serving size of 1.0 oz equivalent meat, as shown:

Recipe Name:		Confetti Soup		Servings per Recipe:		50
Recipe Number:		H-09r		Serving Size:		1 cup
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total Ounces (b) x (e) = or (d) x (e) = (f)	Ounce Eq. M/MA per Serving (f) ÷ Servings = (g)
Canned low-sodium black-eyed peas	90.00000	65.00000	1.38462	37.70000		
Turkey Ham, extra lean, diced 1/4"	3.00000			9.41000		

- Enter the “Total Ounces,” Column (f) for each ingredient by multiplying the numbers in Columns (b) and (e), if a preparation yield is not utilized, or multiplying the numbers in Columns (d) and (e), if a preparation yield is used.

EXAMPLE 1: For the Porcupine Sliders recipe, a preparation yield was not used for the turkey and egg ingredients, so the numbers in Column (b) are multiplied by the numbers in Column (e), as shown:

Recipe Name:		Porcupine Sliders		Servings per Recipe:		50
Recipe Number:		Sandwiches F-10r		Serving Size:		1 slider
Ingredient (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c) = (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total Ounces (b) x (e) = or (d) x (e) = (f)	Ounce Eq. M/MA per Serving (f) ÷ Servings = (g)
Raw ground turkey, lean	6.96875			11.20000	78.05000	
Liquid, whole egg	1.33330			18.00000	23.99940	
					6.9687 x 11.2000 = 78.0500	
					1.3333 x 18.0000 = 23.9994	
Totals					102.04940	
Expected Meal Pattern Contribution (Meat/Meat Alternate - oz eq)						

*Cooked dry beans or peas may be used as a meat alternate or as a vegetable, but not as both components in the same meal.
 *The ingredient quantity must be entered using the same weight or volume unit found in the FBG. If the recipe lists the ingredient in a different unit, you will need to make a conversion before the contribution can be calculated.

Grains Contribution Worksheets

The grains contribution is calculated three different ways, using Method A, B, or C, depending on the type of grain product. Use the method that best fits your recipe.

- ▶ Method A is used to calculate the grains contribution based on finished weight of purchased items using Exhibit A: Grain Requirements for Child Nutrition Programs.
- ▶ Method B is used to determine the grains contribution for items using yield data from Section 4 in the Food Buying Guide for Child Nutrition Programs.
- ▶ Method C is used to calculate the grains contribution for grain products when 1) the product is made at the school/locally, or 2) if the manufacturer's Product Formulation Statement provides the grams of creditable grain per portion.

Grains: Method A (Figure 1d)

1. Record only the recipe's grain ingredients that are purchased as a finished product, as listed in Exhibit A in "Product Description per Exhibit A," Column (a).

EXAMPLE: If a recipe contains 1 lb (16 oz) of purchased, low-fat granola, no fruit, locate the granola in Exhibit A under Group I, Ready-to-eat breakfast cereal and record the ingredient name in Column (a), as shown.

METHOD A - GRAIN CONTRIBUTION - Using Exhibit A: Grain Requirements for Child Nutrition Programs				
Recipe Name: Central Valley Harvest Bake			Servings per Recipe: 50	
Recipe Number: I-20r			Serving Size: 1/2 cup	
Product Description per Exhibit A (a)	Quantity of Product (oz, gm, or cups)* (b)	Exhibit A weight for 1 oz eq (c)	Creditable Amount (b) ÷ (c)= (d)	Creditable Grain Amount per No. of Servings (e)
Low fat granola, no fruit				

2. Enter the ingredient quantity in the "Quantity of Product," Column (b) in ounces, grams, or cups.

METHOD A - GRAIN CONTRIBUTION - Using Exhibit A: Grain Requirements for Child Nutrition Programs				
Recipe Name: Central Valley Harvest Bake			Servings per Recipe: 50	
Recipe Number: I-20r			Serving Size: 1/2 cup	
Product Description per Exhibit A (a)	Quantity of Product (oz, gm, or cups)* (b)	Exhibit A weight for 1 oz eq (c)	Creditable Amount (b) ÷ (c)= (d)	Creditable Grain Amount per No. of Servings (e)
Low fat granola, no fruit	16.00000			

EXAMPLE: The 1 lb of granola is entered in ounces, as shown. There are 16 ounces in one pound.

3. Enter the weight for 1 oz eq of the ingredient as stated on Exhibit A.

EXAMPLE: Using Exhibit A, under the column "Oz Eq for Group I," 1 oz eq = 1/4 cup or 1 ounce of granola. So, 1 oz of purchased granola is equal to 1 oz eq grains. Record this number in Column (c), as shown.

METHOD A - GRAIN CONTRIBUTION - Using Exhibit A: Grain Requirements for Child Nutrition Programs				
Recipe Name: Central Valley Harvest Bake			Servings per Recipe: 50	
Recipe Number: I-20r			Serving Size: 1/2 cup	
Product Description per Exhibit A (a)	Quantity of Product (oz, gm, or cups)* (b)	Exhibit A weight for 1 oz eq (c)	Creditable Amount (b) ÷ (c)= (d)	Creditable Grain Amount per No. of Servings (e)
Low fat granola, no fruit	16.00000	1.00000		

A | Appendix

- Calculate the creditable amount of each purchased grain ingredient, and record the answer in “Creditable Amount,” Column (d). This following calculation is provided for low-fat granola, no fruit.

METHOD A - GRAIN CONTRIBUTION - Using Exhibit A: Grain Requirements for Child Nutrition Programs				
Recipe Name: Central Valley Harvest Bake			Servings per Recipe: 50	
Recipe Number: I-20r			Serving Size: 1/2 cup	
Product Description per Exhibit A (a)	Quantity of Product (oz, gm, or cups)* (b)	Exhibit A weight for 1 oz eq (c)	Creditable Amount (b) ÷ (c)= (d)	Creditable Grain Amount per No. of Servings (e)
Low fat granola, no fruit	16.00000	1.00000	16.00000	
Totals			16.00000	
EXPECTED MEAL PATTERN CONTRIBUTION (GRAINS - oz eq) ▼				

* The Quantity of Product in Column (b) must be in the same unit as the oz eq listed in Exhibit A, Group A - I.

The total creditable amount is totaled, as circled in red above. The sum for Creditable Amount is 16.0000.

- Calculate the creditable grain amount per serving by dividing the creditable amount in Column (d) by the number of servings per recipe, and record this number in “Creditable Grain Amount per No. of Servings,” Column (e), as shown.

METHOD A - GRAIN CONTRIBUTION - Using Exhibit A: Grain Requirements for Child Nutrition Programs				
Recipe Name: Central Valley Harvest Bake			Servings per Recipe: 50	
Recipe Number: I-20r			Serving Size: 1/2 cup	
Product Description per Exhibit A (a)	Quantity of Product (oz, gm, or cups)* (b)	Exhibit A weight for 1 oz eq (c)	Creditable Amount (b) ÷ (c)= (d)	Creditable Grain Amount per No. of Servings (e)
Low fat granola, no fruit	16.00000	1.00000	16.00000	
Totals			16.00000	0.32000
EXPECTED MEAL PATTERN CONTRIBUTION (GRAINS - oz eq) ▼				

* The Quantity of Product in Column (b) must be in the same unit as the oz eq listed in Exhibit A, Group A - I.

- Determine the expected meal pattern contribution for the Method A - grains component by rounding the amount in Column (e) “Creditable Grain Amount per No. of Servings” down to the nearest quarter ounce and record this amount in the Expected Meal Pattern Contribution (Grains - oz eq) field, or if using the Recipe Analysis Workbook spreadsheet, use the drop-down menu as shown.

METHOD A - GRAIN CONTRIBUTION - Using Exhibit A: Grain Requirements for Child Nutrition Programs				
Recipe Name: Central Valley Harvest Bake		Servings per Recipe: 50		
Recipe Number: I-20r		Serving Size: 1/2 cup		
Product Description per Exhibit A (a)	Quantity of Product (oz, gm, or cups)* (b)	Exhibit A weight for 1 oz eq (c)	Creditable Amount (b) ÷ (c)= (d)	Creditable Grain Amount per No. of Servings (e)
Low fat granola, no fruit	16.00000	1.00000	16.00000	
Totals			16.00000	0.32000
EXPECTED MEAL PATTERN CONTRIBUTION (GRAINS - oz eq)				0.25

0.3200 needs to be rounded to the nearest 0.25 oz eq; therefore, a 1/2 cup serving of the recipe provides 0.25 oz eq grains.

* The Quantity of Product in Column (b) must be in the same unit as the oz eq listed in Exhibit A, Group A - I.

- Record the Expected Meal Pattern Contribution for the Method A - grains component amount on Figure 1g or the amount will self-populate if using the Recipe Analysis Workbook spreadsheet. Doing so will combine the meal pattern contribution for the Method A - grains component with the other meal components onto one worksheet for the recipe.

Grains: Method B (Figure 1e)

- Record the recipe's creditable grain ingredients (e.g., Pasta, Elbow Macaroni, Whole Wheat, Regular, Dry) as listed in the Grains section of the FBG in "Ingredients," Column (a).

EXAMPLE: If a recipe contains 6 lb dry, long grain, brown rice, record the ingredient name in Column (a) as it is listed in the FBG, as shown.

METHOD B - GRAIN CONTRIBUTION --- BASED ON ITEMS MADE USING YIELD FROM FOOD BUYING GUIDE SECTION 4				
Recipe Name: Stir-Fried Fajita Chicken, Squash, and Corn		Servings per Recipe: 50		
Recipe Number: D-60r		Serving Size: 1/2 cup		
Ingredient as listed in FBG (a)	Quantity of Ingredient* (b)	Servings per Purchase Unit Column 3 in FBG** (c)	Creditable Grain Amount (b) x (c)= (d)	Creditable Grain Amount per No. of Servings (d) ÷ No. of Servings= (e)
Brown rice, long-grain, regular, dry				

- Enter the ingredient quantity using the same weight or volume unit found in the FBG.

EXAMPLE: The 6 lb brown rice is entered, as shown.

METHOD B - GRAIN CONTRIBUTION --- BASED ON ITEMS MADE USING YIELD FROM FOOD BUYING GUIDE SECTION 4				
Recipe Name: Stir-Fried Fajita Chicken, Squash, and Corn		Servings per Recipe: 50		
Recipe Number: D-60r		Serving Size: 1/2 cup		
Ingredient as listed in FBG (a)	Quantity of Ingredient* (b)	Servings per Purchase Unit Column 3 in FBG** (c)	Creditable Grain Amount (b) x (c)= (d)	Creditable Grain Amount per No. of Servings (d) ÷ No. of Servings= (e)
Brown rice, long-grain, regular, dry	6.00000			

A | Appendix

- Determine the Expected Meal Pattern Contribution for the Method C - grains component by rounding the amount in Column (f), "Creditable Grains per Portion by Reference Amount (16 g)" down to the nearest quarter ounce and record this amount in the Expected Meal Pattern Contribution (Grains - oz eq) field, or if using the Recipe Analysis Workbook spreadsheet, use the amount in Column (e) and the drop-down menu as shown.

METHOD C - GRAIN CONTRIBUTION - USING ONLY THE GRAMS OF CREDITABLE GRAINS for products found in Groups A-G of Exhibit A					
Recipe Name:		Whole Grain-rich Pizza Crust		Servings per Recipe:	50
Recipe Number:				Serving Size:	1 slice
Creditable Grain Ingredient (a)	Quantity of ingredient in ounces* (b)	Convert to Grams Creditable Grains (b) x 28.35= (c)	Total Grams Creditable Grains per No. of Servings (c) ÷ No. of Servings = (d)	Creditable Grains per Portion by Reference Amount (16 g) (d) ÷ 16 g = (e)	
Whole wheat flour	30.00000	850.50000			
Enriched flour	28.00000	793.80000			
Totals		1644.30000	32.88600		2.05538
EXPECTED MEAL PATTERN CONTRIBUTION (GRAINS - oz eq)					2

2.0553 needs to be rounded down to the nearest 0.25 oz eq; therefore, 1 slice of the pizza crust provides 2.00 oz eq grains.

*This worksheet (Grains method C) is only to be used for grain ingredients where the finished product is listed in Groups A-G of Exhibit A. It is not to be used for finished products listed in Groups H and I.

- Record the Expected Meal Pattern Contribution for the Method C - grains component amount on Figure 1g or the amount will self-populate if using the Recipe Analysis Workbook spreadsheet. Doing so will combine the meal pattern contribution for the Method C - grains component with the other meal components onto one worksheet for the recipe.

Expected Meal Pattern Contribution per Serving (Figure 1g)

When using the Recipe Analysis Workbook spreadsheet, this template is self-populated as the meal pattern contribution is calculated for the different meal components of a recipe, or you may record these amounts on Figure 1g.

Recipe Name: Porcupine Sliders
Recipe Number: Sandwiches F-10r
Servings per Recipe: 50
Serving Size: 1 slider

Do not fill in the meal components below. Each component will fill in automatically from their respective worksheets. You may then use that information to write in your final expected meal pattern contribution at the bottom of this page (see box below).

	Beans/Peas	Dark Green	Red/ Orange	Starchy	Other	Additional
Vegetables - cup(s)						
Fruits - cup(s)						
Meat/MA - oz eq	2.00					
Grains-A (oz eq)						
Grains-B (oz eq)	1.00					
Grains-C (oz eq)						
Total Grains (oz eq)	1.00					

EXPECTED MEAL PATTERN CONTRIBUTION PER SERVING (Fill in/Write final meal contribution statement using above meal components.)

1 slider provides 2.00 oz eq meat/meat alternate and 1.00 oz eq grains.

Recipe Analysis Workbook templates

Following are templates for each worksheet in the Recipe Analysis Workbook (Figures 1a-1g) to be completed in a hard copy format. They can be printed and/or copied to help you determine the meal pattern contribution for recipes in your Child Nutrition meal program.

The Recipe Analysis Workbook is also available in a spreadsheet format upon request to the CNP-NTAB mailbox at cnpntab@fns.usda.gov and an interactive, web-based Recipe Analysis Workbook tool is available at <https://foodbuyingguide.fns.usda.gov>. Use of this workbook in the spreadsheet or web-based format is recommended to obtain the maximum benefit; however, the examples in this appendix have been tailored to both the spreadsheet and hard copy format for your convenience.

A | Appendix

Figure 1a
Vegetable (w/Subgroups) Contribution

Recipe Name:									Servings per Recipe:			
Recipe Number:									Serving Size:			
Ingredients (a)	Quantity of Ingredient (b)	Preparation Yield Column 6 in FBG (c)	Calculated Quantity to Purchase (b) ÷ (c)= (d)	Servings per Purchase Unit Column 3 in FBG (e)	Total 1/4-cups (b) x (e)= (d) x (e)= (f)	Convert to cups (f) ÷ 4= (g)	Total Cups Vegetable per Serving (g) ÷ No. of Servings= (h)	Decimal Eq. to the Nearest Portion of a Cup (i)	Equivalent Cup Volume (j)	Remaining (k)		
Beans/Peas (Legumes)												
Beans/Peas (Legumes) Totals												
Dark Green												
Dark Green Totals												
Red/Orange												
Red/Orange Totals												
Starchy												
Starchy Totals												
Other												
Other Totals												
Total Remaining (l)	Eq Cup Volume (m)											
Expected Meal Pattern Contribution (Vegetable - Cups):												

- Other vegetables requirement may be met with any additional amounts from only the Dark Green, Red/Orange, and Beans/Peas (Legumes) vegetable subgroups.
- Remember to add any remaining or fractions of vegetables not used to meet the five subgroups to Additional vegetables in the recipe.
- Raw leafy greens count as half the volume served and tomato paste and purees are credited on calculated volume of the whole food equivalency.
- Cooked beans or peas (legumes) may be used as a vegetable or as a meat alternate, but not as both components in the same meal.
- Please make sure all units are the same. If the ingredient quantity is not in the preferred weight or volume, conversions will need to be made before the contribution can be calculated.
- For vegetable subgroup information, click here to go to CNPP's Vegetable Subgroup List at: https://www.cnpp.usda.gov/sites/default/files/usda_food_patterns/ItemClustersPercentOfConsumptionAndRepresentativeFoods.pdf.

A | Appendix

Figure 1d
Grains Contribution using Method A, B, or C

METHOD A - GRAIN CONTRIBUTION – BASED ON REVISED EXHIBIT A (weights per ounce equivalent)				
Recipe Name:				Servings per Recipe:
Recipe Number:				Serving Size:
Product Description per FBG (a)	Quantity of Product/Ingredient (b)	Exhibit A weight for 1 oz eq (c)	Creditable Amount (b) ÷ (c)= (d)	Creditable Grain Amount per No. of Servings (e)
Totals				
EXPECTED MEAL PATTERN CONTRIBUTION (GRAINS - oz eq)				

•Please make sure all units are the same. If the ingredient quantity is not in the preferred weight or volume, conversions will need to be made before the contribution can be calculated.

Figure 1e
Grains Contribution by Methods A, B, or C (cont'd)

METHOD B - GRAIN CONTRIBUTION --- BASED ON SCHOOL-MADE ITEMS USING FBG YIELDS				
Recipe Name:				Servings per Recipe:
Recipe Number:				Serving Size:
Ingredient (a)	Quantity of Ingredient as Purchased (number of purchase units) (b)	Servings per Purchase Unit in Food Buying Guide (c)	Creditable Grain Amount (b) x (c)= (d)	Creditable Grain Amount per No. of Servings (d) ÷ No. of Servings= (e)
Totals				
EXPECTED MEAL PATTERN CONTRIBUTION (GRAINS - oz eq)				

• The ingredient quantity must be entered using the same weight or volume unit found in the FBG. If the recipe lists the ingredient in a different unit, you will need to make a conversion before the contribution can be calculated.

B Appendix

Using Column 6 of the Food Buying Guide Yield Tables

Column 6 of the Food Buying Guide (FBG) Yield Tables provide information to help you plan menus, make purchasing decisions, and ensure prepared meals meet Child Nutrition Programs meal pattern requirements. Below are practical ways the information in Column 6 can be utilized.

A. Determine the amount of food to purchase.

Column 6 provides the quantity of ready-to-cook or cooked food provided in the “As Purchased” (AP) form of the food. This information is used to calculate the amount of food the Child Nutrition Program operator needs to purchase and/or prepare based on specific yield information. See the examples below:

EXAMPLE: A recipe contains 2 pounds of fresh, diced watermelon. Use the information in Column 6 to determine the amount of fresh, whole watermelon to purchase, as follows:

Section 3 - Fruits					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
WATERMELON					
Watermelon, fresh ³ <i>Whole</i>	Pound	6.10	1/4 cup diced fruit without rind	16.40	1 lb AP = 0.61 lb (about 1-1/2 cups) ready-to-serve raw, 1/2-inch diced watermelon without rind

The information in Column 6 indicates 1 lb of whole, fresh watermelon as purchased yields 0.61 lb ready-to-serve, raw, 1/2 inch pieces, diced, without rind.

Divide 2 lb by 0.61 lb

$$2 \div 0.61 = 3.28 \text{ lb}$$

To ensure enough food is purchased, round up to 3.5 lb.

Therefore, you will purchase 3.5 lb of fresh, whole watermelon to yield the 2 lb of raw watermelon, 1/2 inch pieces, diced, without rind needed for the recipe.

EXAMPLE: A recipe contains 4.5 lb of raw, cored, peeled apples. To determine the amount of fresh, whole, 125-138 count apples to purchase, use the information in Column 6 as follows:

Section 3 - Fruits					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
APPLES					
Apples, fresh 125-138 count Whole, <i>Includes USDA Foods</i>	Pound	11.40	1/4 cup raw, cored, peeled fruit	8.80	1 lb AP = 0.78 lb (about 2-3/4 cups) ready-to-serve or -cook raw, cored, peeled apples

The information in Column 6 indicates that 1 lb of fresh, whole, 125-138 count apples yields 0.78 lb of raw, cored, peeled, ready-to-cook or -serve apples.

B | Appendix

Divide 4.5 lb by 0.78 lb

$$4.5 \div 0.78 = 5.76 \text{ lb}$$

To ensure enough food is purchased, round up to 6.0 lb.

Therefore, you will purchase 6 lb of fresh, whole, 125-138 count apples to yield the 4.5 lb of raw, cored, peeled, ready-to-serve apples needed for the recipe.

EXAMPLE: A recipe contains 5 lb 10 oz of fresh, ready-to-cook broccoli. To determine the amount of fresh whole broccoli to purchase, use the information in Column 6 as follows:

Section 2 - Vegetables					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
BROCCOLI					
Broccoli, fresh Untrimmed	Pound	9.80	1/4 cup raw vegetable spears	10.30	1 lb AP = 0.81 lb ready-to-cook broccoli

The information provided in Column 6 indicates that 1 lb of fresh, untrimmed broccoli provides 0.81 lb ready-to-cook broccoli.

Change the 5 lb 10 oz to the decimal equivalent (5.62 lb).

Divide 5.62 lb by 0.81 lb

$$5.62 \div 0.81 = 6.93 \text{ lb}$$

To ensure enough food is purchased, round up to 7.0 lb.

Therefore, purchase 7 lb of fresh, untrimmed, broccoli to yield 5 lb 10 oz of ready-to-cook broccoli needed for the recipe.

EXAMPLE: To determine the amount of tuna provided in a 20 oz can, use the information in Column 6 as follows:

Section 1 - Meats/Meat Alternates					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
Seafood, TUNA, canned					
Seafood, canned, Tuna Grated or Flake	60 oz Can	55.00	1 oz drained tuna	1.90	60 oz can = about 55.0 oz drained tuna

Column 6 only provides the yield of drained, grated or flaked tuna from a 60 oz can. Use this information to determine the yield of drained, grated or flaked tuna in a 20 oz can.

Divide 20 oz can by 60 oz can.

$$20 \div 60 = 0.33 \text{ oz}$$

Multiply by the yield of drained tuna from a 60 oz can.

$$0.33 \times 55 = 18.15 \text{ oz}$$

Therefore, there are 18.15 oz of drained, grated or flaked tuna in a 20 oz can.

B. Determine the weight of a serving in cups.

Column 6 provides the weight and/or number of cups in a can of vegetable or fruit that is drained (unheated and/or heated). Use this information to determine the weight of a serving in cups.

EXAMPLE: To determine the weight of a 1/2 cup of heated and drained black-eyed peas, use the information in Column 6 as follows:

Section 1 - Meats/Meat Alternates					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
BEANS, BLACK-EYED (or PEAS)					
Beans, Black-eyed (or Peas), dry, canned <i>Whole, Includes USDA Foods</i>	No. 10 Can (108 oz)	37.70	1/4 cup heated, drained beans	2.70	1 No. 10 can = about 65.0 oz (9-3/8 cups) heated, drained beans; 1 No. 10 can = about 78.5 oz (11-1/2 cups) drained, unheated beans

The information provided in Column 6 indicates that the drained, heated black-eyed peas from a No. 10 can (108 oz) provide about 65 oz (9-3/8 cups).

Change the cup measure (9-3/8 cups) into a decimal equivalent (9.375 cups).

Then divide the drained weight (65 oz) by 9.375 cups.

$$65 \div 9.375 = 6.93 \text{ oz}$$

The estimated weight of 1 cup is 6.93 oz. To determine the weight of 1/2 cup, divide by 2.

$$6.93 \text{ oz} \div 2 = 3.47 \text{ oz}$$

Therefore, 1/2 cup of heated and drained black-eyed peas weighs about 3.47 oz.

C. Determine the quantity of servings in can sizes NOT listed in FBG.

EXAMPLE: To determine the quantity of 1/4 cup servings in a 16 oz can of black-eyed peas, as purchased (AP), that are heated, drained, use the information in Column 6 as follows:

Section 1 - Meats/Meat Alternates					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
BEANS, BLACK-EYED (or PEAS)					
Beans, Black-eyed (or Peas), dry, canned <i>Whole, Includes USDA Foods</i>	No. 10 Can (108 oz)	37.70	1/4 cup heated, drained beans	2.70	1 No. 10 can = about 65.0 oz (9-3/8 cups) heated, drained beans; 1 No. 10 can = about 78.5 oz (11-1/2 cups) drained, unheated beans

The information provided in Column 6 indicates that the contents of a No. 10 can (108 oz) provides about 65 oz (9-3/8 cups) of heated and drained black-eyed peas. Change the cup measure (9-3/8 cups) into a decimal equivalent (9.375 cups).

Multiply the 9.375 cups by 16 oz.

$$16 \times 9.375 = 150$$

Then divide by the weight of the No. 10 can (108 oz) to determine the number of cups in a 16 oz can.

$$150 \div 108 = 1.38$$

B | Appendix

When the contents of a 16 oz can of black-eyed peas have been heated and drained, it provides 1.38 cups.

To determine a number of 1/4 cups, multiply 1.38 by 4.

$$1.38 \times 4 = 5.52 \text{ } 1/4 \text{ cups}$$

Therefore, a 16 oz can of black-eyed peas provides 5.52 1/4 cup servings of heated, drained black-eyed peas.

D. Determine the amount of raw meat or seafood to purchase to allow for loss (moisture and fat) that occurs during cooking.

EXAMPLE: To determine the amount of raw, ground beef, not more than 15% fat, required to provide 100 lb of cooked lean meat, use the information in Column 6 as follows:

Section 1 - Meats/Meat Alternates					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
BEEF, GROUND, fresh or frozen					
Beef, Ground, fresh or frozen ^{9,10} <i>no more than 15% fat, (Like IMPS #136)</i>	Pound	12.00	1 oz cooked lean meat	8.40	1 lb AP = 0.75 lb cooked, drained, lean meat

The information provided in Column 6 indicates 1 lb of fresh or frozen ground beef, no more than 15% fat as purchased, provides 0.75 lb of cooked, drained lean meat.

Divide the cooked meat by the yield from Column 6.

$$100 \div 0.75 = 133.33 \text{ lb}$$

To ensure enough food is purchased, round up to 134 lb.

Therefore, you will purchase 134 lb of ground beef (no more than 15% fat) to yield the 100 lb of cooked, lean meat for the recipe.

EXAMPLE: To determine the amount of raw flounder necessary to yield 6 lb 6 oz of cooked flounder, use the information in Column 6 as follows:

Section 1 - Meats/Meat Alternates					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
Seafood, FISH FILLETS and STEAKS, fresh or frozen					
Seafood, fresh or frozen, Fish Fillets	Pound	11.20	1 oz cooked fish	9.00	1 lb AP = 0.70 lb cooked fish
	Pound	7.46	1-1/2 oz cooked fish	13.50	1 lb AP = 0.70 lb cooked fish

The information provided in Column 6 indicates that 1 lb of fresh or frozen fish fillets as purchased, provides 0.70 lb of cooked fish.

Divide the cooked quantity by the yield from Column 6.

$$6.375 \div 0.70 = 9.1 \text{ lb}$$

To ensure enough food is purchased, round up to 10 lb.

Therefore, purchase 10 lb of fresh or frozen flounder fillets to yield the 6 lb 6 oz of cooked flounder needed for the recipe.

E. Determine the number of cups of dried grains required to yield a specific number of servings of cooked grains.

EXAMPLE: To determine the number of cups of dry, rolled, regular oats needed to provide 22 1/4 cup cooked servings, use the information in Column 6 as follows:

Section 4 - Grains					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
CEREAL GRAINS (continued)					
Cereal Grains Oats (Group H) <i>Rolled, Regular, Dry, Includes USDA Foods</i>	Pound	45.40	1/4 cup cooked	2.20	1 lb dry = about 6 cups dry regular rolled oats

The information provided in Column 6 indicates that 1 lb dry = about 6 cups of dry, regular rolled oats. Multiply the number of cups from Column 6 by the desired number of cooked servings.

$$6 \text{ cups} \times 22 \frac{1}{4} \text{ cup cooked servings} = 132$$

Next, divide 132 by 45.4 (the number of 1/4 cup cooked servings per pound of oats, rolled, regular, dry as listed in Column 3).

Note: pound is the purchase unit for dry oats.

$$132 \div 45.4 = 2.9 \text{ cups}$$

To ensure enough food is available, round up to 3 cups.

Therefore, 3 cups of dry, rolled, regular oats yield 22 1/4 cup servings of cooked oats.

F. Determine the yield from cups of dried grains.

EXAMPLE: A recipe calls for 10 cups of dry brown rice. To determine the number of 1/2 cup cooked servings of brown, long grain, parboiled dry rice that the recipe will yield, use the information in Column 6 as follows:

Section 4 - Grains					
1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
RICE (continued)					
Rice (Group H) <i>Brown, Long grain, Parboiled, Dry</i>	Pound	15.50	1/2 cup cooked	6.50	1 lb dry = about 2-1/8 cups dry brown rice; 1 lb dry = about 7-3/4 cups cooked; 1 cup dry = about 3-5/8 cups cooked

The information in Column 6 indicates that 1 lb dry = about 2-1/8 cups of brown, long grain, parboiled dry rice. Change the cup measure (2-1/8 cups) into a decimal equivalent (2.125 cups).

B | Appendix

Divide 10 cups by 2.125

$$10 \div 2.125 = 4.7 \text{ lb}$$

Multiply 4.7 lb by 15.5 (the number of 1/2 cup cooked servings per pound of brown, long grain, parboiled dry rice as listed in Column 3)

NOTE: pound is the purchase unit for dry brown rice.

$$4.7 \text{ lb} \times 15.5 = 72.85 \text{ 1/2 cup servings of cooked rice}$$

Therefore 10 cups of brown, long grain, parboiled dry rice yields 72.85 1/2 cup servings of cooked rice.

G. Points to Remember

Do not use Column 6 when the recipe ingredient is put into the recipe in the same form as the “As Purchased” unit in Column 2 of the FBG. See examples below:

1. A recipe calls for 1 lb of sliced frozen strawberries and 1 lb of either ready to use (RTU) or individually quick frozen (IQF) strawberries is purchased. There are no additional calculations needed to determine the quantity of frozen strawberries to purchase because the strawberries were purchased in the same form as used in the recipe.
2. A recipe calls for 1 lb of frozen broccoli florets and 1 lb of either RTU or IQF broccoli florets are purchased. There are no additional calculations needed to determine the quantity of frozen broccoli to purchase because the broccoli was purchased in the same form it is used in the recipe.
3. A recipe calls for 1 lb of cooked, diced chicken and 1 lb of cooked, diced chicken is purchased for this recipe. Because the chicken is purchased in the form it is used in the recipe (“As Purchased” form), there is no preparation yield (food loss) and thus the amount to purchase is based on the quantity of the ingredient as listed in the recipe.

For additional opportunities to practice using Column 6, please refer to the “Methods Used to Determine Quantity” section beginning on page I-33.

C | Appendix

The USDA Child Nutrition (CN) Labeling Program

Common Questions

What is the Child Nutrition Labeling Program?

The Child Nutrition (CN) Labeling Program is a voluntary Federal labeling program for the Child Nutrition Programs.

Does the CN Labeling Program apply to food-based menu planning?

Yes, the CN Labeling Program applies to food-based menu planning approaches for the National School Lunch Program and School Breakfast Program, Child and Adult Care Food Program, and Summer Food Service Program. The CN label on a product communicates how the product contributes to USDA meal pattern requirements.

Who runs the program?

Agricultural Marketing Service (AMS) of the USDA manages much of the CN Labeling Program in collaboration with three other Federal agencies: USDA's Food and Nutrition Service (FNS), Food Safety and Inspection Service (FSIS), and National Marine Fisheries Service (NMFS):

- FNS is responsible for regulations that govern the CN Labeling Program.
- NMFS oversees the CN label reviews and approvals for seafood products.
- FSIS provides inspection oversight for meat, poultry, and egg products to ensure plants are operating according to Federal food safety guidelines.
- Commercial food processing firms submit CN label applications to AMS for approval.

How does the program work?

- Foods must be produced in a federally inspected establishment.
- Food processing firms must have an approved Quality Control (QC) Program. Guidance for developing a QC Program and the Standard Operating Procedures (SOPs) for submitting a QC document for approval is available on the CN Labeling website at <http://www.fns.usda.gov/cnlabeling/food-manufacturersindustry>.
- Food processing firms must allow Federal personnel to perform verification services. Verification services ensure products in compliance with the approved QC Programs. The SOPs for verification services are also available on the CN Labeling Web site at <http://www.fns.usda.gov/cnlabeling/food-manufacturersindustry>.
- Food processing firms must sign a service agreement with the AMS, CN Labeling Office.
- AMS or NMFS will conduct an evaluation of a product's formulation to determine its contribution towards meal pattern requirements. Once approved, the manufacturer may state the contribution on the product's label.
- The CN Label provides Child Nutrition program operators a warranty against audit claims if the product is used according to the manufacturer's directions as printed on the approved CN label.

What products are eligible for CN labels?

Main dish products which contribute to the Meats/Meat Alternates component of the meal pattern requirements are eligible for a CN label. Examples of these products include beef patties, cheese or meat pizzas, meat or cheese and bean burritos, egg rolls, and breaded fish portions.

C | Appendix

What must eligible products have to carry a CN label?

- The contribution of the food component(s) must be determined using yields in the Food Buying Guide for Child Nutrition Programs.
- The product formulation and CN label must be approved by AMS.

Are manufacturers required to CN label products?

There is no Federal requirement for products to have a CN label. The decision to procure CN labeled products is made at the local level. If CN labeled products are desired, program operators must clearly state this in their purchasing specifications.

What are the advantages of using CN labeled products?

- A CN label statement clearly identifies the contribution of a product toward the meal pattern requirements. It protects Child Nutrition program operators from exaggerated claims about a product.
- A CN label provides a warranty against audit claims, if the CN labeled product is used according to the manufacturer's directions.
- CN labels simplify cost comparisons of like products.

Do CN labeled products cost more?

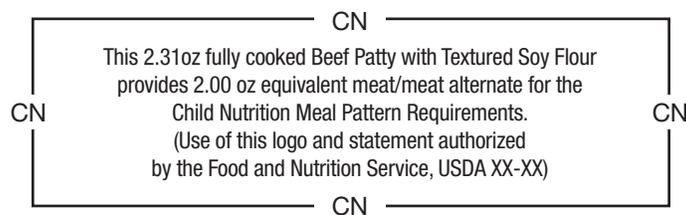
CN labeled products may cost more. Special labeling requirements, inspection costs, and extra staff costs to monitor quality control may be contributing factors in CN labeled products costing more than similar non-CN labeled products. Keep in mind that cost comparison between two meat products should be based on the cost per ounce or pound of "contribution" to the meal pattern requirements, not on the product cost per ounce or pound.

How do I identify a CN labeled product?

A CN labeled product will always contain the following:

- The CN logo, which is a distinct border
- The meal pattern contribution statement
- A unique 6-digit product identification number (assigned by AMS)
- The USDA/FNS authorization statement
- The month and year of AMS approval
- Plus the remaining required label features: product name, inspection legend, ingredient statement, signature/address line, and net weight.

A sample CN logo:



NOTE: The X's in the sample CN Logo are only used to demonstrate the placement of the CN identification number and the final date. If you receive a CN labeled product containing all X's (all zeroes, or non-number symbols) for the CN identification number, the label is not valid. If a CN label is not valid, FNS cannot provide a warranty for its use toward meal pattern requirements. See page C-4 for information on the CN Labeling Verification and Reporting System to assist you in identifying valid CN labels.

Are CN labeled products more nutritious than similar non-CN labeled products?

No. A CN label does not indicate that the CN product is healthier or more nutritious than a similar non-CN labeled product. The CN crediting statement declares the quantities of the creditable food item(s) in a processed food. The quantity of creditable food is used to meet the meal pattern requirements.

Are CN labeled products of a higher quality than non-CN labeled products?

No. While a CN labeled product is guaranteed to contain a certain quantity of food, it does not indicate that the quality of the food is any different than a non-CN labeled food. Neither does it mean the foods are safer to eat or free of pathogens or allergens.

Helpful Resources

CN Labeling Website

This website includes general background of the CN Labeling Program and provides helpful information for food manufacturers and FNS Meal Programs.

<https://www.fns.usda.gov/cnlabeling/child-nutrition-cn-labeling-program>

The CN Label Verification Reporting System

The system was developed to assist State agency reviewers, CN program operators, and the food industry in verifying the status of a CN label and the validity of a CN label copied with a watermark.

The new system produces two comprehensive monthly reports:

- ▶ CN Label Verification Report includes all information pertaining to the valid CN label which includes the crediting information (meal pattern contribution statement); label expiration date; and the manufacturer's establishment number.

https://www.fns.usda.gov/sites/default/files/cn/cnl_verificationreport.pdf

- ▶ CN Label Manufacturers Report includes contact information for manufacturers that are authorized to produce CN labeled products. This report allows users to link the manufacturer's list from the CN Label Verification Report.

https://www.fns.usda.gov/sites/default/files/cn/cnl_manufacturers.pdf

For more information

For additional information about the CN Labeling Program, contact AMS:

CN Labeling Program Operations Office
USDA, AMS, FV, SCI Division - Stop 0247, Room 0710-S
1400 Independence Ave., SW
Washington, DC 20250
E-mail: CNLabeling@ams.usda.gov
Phone: (202)720-9939
Fax: (202) 690-3824

C | Appendix

Food Items for Further Processing

The yield data for foods in sections 1 - 5 of the Food Buying Guide for Child Nutrition Programs are for foods that are commonly purchased at the program level. The table below of Food Items for Further Processing contains food items intended to be used by industry for further processing. The yield information may also be used in the CN Labeling Program. It is important that Child Nutrition Program operators are aware of the yields for food items that industry uses for determining the meal pattern contribution for the Federal meal pattern requirements. The yield data provides program operators the information needed to verify that the processed food items they purchase are credited in a manner consistent with program requirements.

Food Buying Guide for Child Nutrition Programs

Appendix C

Food Items for Further Processing

Appendix C - Food Items for Further Processing

1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
BEAN PRODUCTS					
Bean Flour¹ <i>Flour, Bean, Includes Pulse Flours</i>	Pound	13.00	1/4 cup vegetable or 1 oz meat alternate	7.70	
BEEF, LEAN FINELY TEXTURED (LFTB)					
Beef, fresh or frozen <i>Lean finely textured beef (LFTB), Raw</i>	Pound	12.90	1 oz lean cooked meat	7.80	1 lb AP = 0.81 lb cooked lean meat
	Pound	8.64	1-1/2 oz lean cooked meat	11.60	1 lb AP = 0.81 lb cooked lean meat
CHICKEN, MECHANICALLY OR HAND SEPARATED					
Chicken, fresh or frozen <i>Mechanically or Hand separated, Raw</i>	Pound	11.20	1 oz lean cooked poultry	9.00	1 lb AP = 0.70 lb cooked poultry
	Pound	7.46	1-1/2 oz cooked poultry	13.50	1 lb AP = 0.70 lb cooked poultry
PORK, LEAN FINELY TEXTURED (LFTP)					
Pork, fresh or frozen <i>Lean finely textured pork (LFTP), Raw</i>	Pound	12.90	1 oz lean cooked meat	7.80	1 lb AP = 0.81 lb cooked lean meat
	Pound	8.64	1-1/2 oz lean cooked meat	11.60	1 lb AP = 0.81 lb cooked lean meat
SEAFOOD					
Seafood, frozen, Fish fillet block <i>Raw</i>	Pound	12.40	1 oz cooked fish	8.10	1 lb AP = 0.78 lb cooked fish
	Pound	8.32	1-1/2 oz cooked fish	12.10	1 lb AP = 0.78 lb cooked fish
Seafood, frozen, Minced fish block <i>Raw</i>	Pound	12.00	1 oz cooked fish	8.40	1 lb AP = 0.75 lb cooked minced fish
	Pound	8.00	1-1/2 oz cooked fish	12.50	1 lb AP = 0.75 lb cooked minced fish
Seafood, frozen, Shrimp <i>Minced, Raw</i>	Pound	9.28	1 oz cooked fish	8.70	1 lb AP = 0.73 lb cooked shrimp
	Pound	6.18	1-1/2 oz cooked fish	16.20	1 lb AP = 0.58 lb cooked shrimp
Seafood, frozen, Squid meat block <i>Rings and Tentacles, Raw</i>	Pound	11.60	1 oz cooked fish	8.70	1 lb AP = 0.73 lb cooked squid meat
	Pound	7.78	1-1/2 oz cooked fish	12.90	1 lb AP = 0.73 lb cooked squid meat

Appendix C - Food Items for Further Processing

1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
TURKEY, MECHANICALLY OR HAND SEPARATED					
Turkey, fresh or frozen <i>Mechanically or Hand separated, Raw</i>	Pound	11.20	1 oz cooked poultry	9.00	1 lb AP = 0.70 lb cooked poultry
	Pound	7.46	1-1/2 oz cooked poultry	13.50	1 lb AP = 0.70 lb cooked poultry

¹ Bean flour as an ingredient in a finished product may contribute toward the vegetable or meats/meat alternates meal components, but not simultaneously. The finished product must also contain a creditable amount of recognizable vegetable or meats/meat alternates. For example, pasta made with bean flour may credit towards the bean/pea vegetable subgroup if the program operator tops the bean pasta dish with at least 1/8 cup beans/peas. The bean pasta may also credit towards the meats/meat alternates component if the program operator tops the bean pasta dish with at least 0.25 oz. eq. of meats/meat alternates (e.g. meat or cheese sauce). The bean pasta served alone does not contribute towards the meal pattern requirements. Manufacturers formulating products with bean flours must provide documentation to program operators demonstrating how these products may contribute to meal pattern requirements, and they are encouraged to provide a CN label, when applicable.

Appendix C - Food Items for Further Processing

1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size	5. Purchase Units for 100 Servings	6. Additional Information
BEAN PRODUCTS					
Bean Flour¹ <i>Flour, Bean, Includes Pulse Flours</i>	Pound	13.00	1/4 cup vegetable or 1 oz meat alternate	7.70	
TOMATO PASTE					
Tomato Paste², canned, Medium <i>28% or more, but less than 32% Natural Tomato Soluble Solids (NTSS)</i>	Pound	32.20	1 tablespoon paste (1/4 cup vegetable)	3.20	
Tomato Paste, canned, Heavy <i>32% or more, but less than 39.3% Natural Tomato Soluble Solids (NTSS)</i>	Pound	36.80	1 tablespoon paste (1/4 cup vegetable)	2.80	
Tomato Paste, canned, Extra Heavy <i>39.3% or more Natural Tomato Soluble Solids (NTSS)</i>	Pound	45.10	1 tablespoon paste (1/4 cup vegetable)	2.30	

¹ Bean flour as an ingredient in a finished product may contribute toward the vegetable or meats/meat alternates meal components, but not simultaneously. The finished product must also contain a creditable amount of recognizable vegetable or meats/meat alternates. For example, pasta made with bean flour may credit towards the bean/pea vegetable subgroup if the program operator tops the bean pasta dish with at least 1/8 cup beans/peas. The bean pasta may also credit towards the meats/meat alternates component if the program operator tops the bean pasta dish with at least 0.25 oz. eq. of meats/meat alternates (e.g. meat or cheese sauce). The bean pasta served alone does not contribute towards the meal pattern requirements. Manufacturers formulating products with bean flours must provide documentation to program operators demonstrating how these products may contribute to meal pattern requirements, and they are encouraged to provide a CN label, when applicable.

² If the percentage of Natural Tomato Soluble Solids (NTSS) is not specified for the brand of tomato paste you are using, use the yield data for tomato paste light, 24%-28% NTSS.

D | Appendix

The Food Purchasing Process

The Food Buying Guide for Child Nutrition Programs (FBG) is designed to help you determine how much food to buy and prepare to ensure that the meals you serve under the Child Nutrition Programs (CNP) meet program requirements. However, this is only part of the story. Purchasing involves a methodical, step-by-step process that begins with menu planning and ends with meal service. The tasks are the same whether purchasing for the private commercial sector or the public sector. You may operate a single site with no support from a central administrative office or work in a large school district, where tasks are divided among several staff persons. Regardless of the setting in which you operate, all of the steps must be completed by someone in the organization to ensure you obtain high-quality products at the best possible price.

The USDA Food and Nutrition Service (FNS) encourages you to learn as much as you can about the purchasing process. The following resources contain information to assist you in proper procurement practices:

Farm to School programs are taking root in school districts across the country, sourcing local foods and providing complementary educational activities that emphasize food, agriculture, and nutrition. Whether purchasing for schools or day care homes or centers, the Procuring Local Foods for Child Nutrition Programs (<https://www.fns.usda.gov/farmtoschool/procuring-local-foods>) publication covers procurement basics, defining local foods, where to find local products, and the variety of ways a CNP can purchase locally in accordance with regulations.

The Institute of Child Nutrition (ICN) (<http://www.theicn.org>) has many procurement resources with information on how to procure goods, products, and services. Use these resources to help you identify key factors to consider during the procurement decision-making process and to navigate through the complex process of implementing a cost-effective procurement system in the CNP.

The FNS Menu Planner for School Meals: Planning, Preparing, Serving, and Marketing Healthy Meals (<https://www.fns.usda.gov/tn/resource-library>) is designed to help school nutrition professionals plan, prepare, provide, and market great-tasting, nutritious, and safe meals that meet the requirements in the nutrition standards for school meals. Chapter 5: Procurement and Inventory Management of the Menu Planner guides you through procurement and inventory management as they relate to menu planning.

Procurement topics covered in this resource include:

- Forecasting, sourcing, and bidding
- USDA Foods: Variety, menu options, and available resources
- Buying locally: Farm to School and geographical preferences
- Documenting: Child Nutrition (CN) Labels, product formulation statements (PFS), and Nutrition Facts labels
- Equipment needs: Choosing and using equipment for healthy meals

See Appendix F for a list of additional resources that may offer additional assistance in planning, serving, marketing, and preparing appealing menus to Child Nutrition Program participants.

E | Appendix

Grains/Breads Component: The Summer Food Service Program (SFSP) and National School Lunch Program (NSLP) Afterschool Snack Service

The information contained in this Appendix provides guidance on meeting the Meal Pattern Requirements for grains served in the Summer Food Service Program (SFSP) and NSLP Afterschool Snack Service. Child Nutrition operators for these programs may also choose to follow the guidance listed in Section 4. Please note that programs operating under seamless summer requirements must align with standards for the NSLP/SBP as identified in the following guidance.

Reimbursable breakfast and lunch meals offered for the SFSP must include food product(s) that contribute toward the grains/breads requirement. A reimbursable snack in the SFSP and NSLP Afterschool Snack Service may contain a grain component. FNS meal pattern regulations establish the minimum serving size(s) of grains required for the SFSP and NSLP Afterschool Snack Service. Meal pattern charts for each of the Child Nutrition Programs are on pages I-7 through I-13. Please note this guidance on grains/breads servings is also applicable to the CACFP meal program through October 1, 2019.

Criteria for Determining Creditable Grains/Breads

Use the following criteria as a basis for selecting items that will meet the grains/breads requirement:

- A.** All grain items must be made from enriched or whole grain meal and/or flour, or if using a cereal they must be whole grain, enriched or fortified. Bran and germ are credited the same as enriched or whole grain meal or flour.
- B.** The label must indicate that 1) the food product is made from enriched or whole grain meal and/or flour, bran and/or germ, or 2) the cereal is whole grain, enriched or fortified. If the food product is labeled enriched, it must meet the Food and Drug Administration's Standards of Identity (21 CFR Part 136, Part 137, Part 139) for enriched bread, macaroni and noodle products, rice, or cornmeal.
- C.** The food product must be provided in quantities specified in the appropriate program regulations. One-quarter (0.25) of a serving is the smallest amount allowable to be credited toward the minimum quantities of grains specified in program regulations.

E | Appendix

Steps in Identifying Creditable Grains/Breads Products

To determine if a grain food product is creditable, Child Nutrition Program operators need to verify that the food product is made from enriched or whole grain meal and/or flour, bran, and/or germ, or if it is a cereal, that it is whole grain, enriched, or fortified.

The following steps will help you to identify if a food product is creditable towards the grains component. If at any point during the steps a “yes” answer is obtained, proceed to Section III “Criteria for Determining Serving Sizes.” If you answer “no” to all of the steps from A to H, the food product is not creditable towards the grains/breads component.

The following steps are summarized in a flow chart on page E-5.

A. Is the food product labeled as whole wheat or whole grain?

If a food product is made from whole grain, the product name on the label will usually include the word “whole.”

Some examples include: whole wheat bread, whole wheat rolls, whole wheat buns, whole wheat macaroni products, and whole grain pasta.

or

B. Is the food product labeled as enriched?

If a food product is enriched, the product name on the label will include the word “enriched.”

Some examples include: enriched bread, enriched rolls, enriched buns, enriched rice, enriched macaroni products, enriched egg noodle products, enriched grits, and enriched cereal.

or

C. If the food product is a cereal, is it fortified?

(Fortification only applies to cereals. If the food product is not a cereal, continue on to step D). Cereal products that have been fortified will have an ingredient statement similar to the following (for EXAMPLE purposes only):

- **Ingredients:** Corn flour blend (whole grain yellow corn flour and de-germinated yellow corn flour), sugar, oats, contains 2% or less of salt, baking soda, caramel color, annatto color, BHT for freshness.
- **Vitamins and Minerals:** Vitamin C (sodium ascorbate, ascorbic acid), niacinamide, vitamin B6 (pyridoxine hydrochloride), reduced iron, zinc oxide, folic acid, vitamin B2 (riboflavin), vitamin B1 (thiamin hydrochloride), vitamin A palmitate, vitamin D, vitamin B12.

or

D. Is the primary grain ingredient in the ingredient statement labeled as enriched?

Ingredients that meet the standards for enrichment will include the word “enriched” as part of the ingredient name. This is typically declared on the label with the word “enriched” followed by the usual name of the grain ingredient along with the parenthetical listing of the enriched nutrients.

Some examples include: enriched wheat flour (wheat flour, niacin, iron, thiamine mononitrate, riboflavin, folic acid); enriched cornmeal (...); enriched self-rising flour (...); and enriched farina (...).

Note: While enrichment of whole grain cornmeal is not required, many programs choose to purchase these products for the added nutritional value.

or

E. Is the primary grain listed in the label ingredient statement designated as a whole grain?

A whole grain ingredient will usually include the word “whole,” “cracked,” “crushed,” or “groats.”

Some examples include: whole wheat flour, cracked wheat, crushed wheat, buckwheat groats, graham flour (which is another name for whole wheat flour), brown rice (which indicates that the rice retains the bran layer), old-fashioned oatmeal (also called rolled oats), quick-cooking oats, and whole cornmeal.

If the label ingredient statement does not clearly indicate the grain is whole grain or enriched, the Child Nutrition Program operator must obtain documentation from the manufacturer certifying the grain ingredient is whole grain or enriched.

Check with the manufacturer anytime you are unsure if the product meets requirements.

Some examples of grains that are whole grains, but are not always clearly indicated on the label as such include: amaranth, millet, and quinoa.

or

F. Is the primary grain listed in the label ingredient statement bran and/or germ?

Bran and germ are two components of grains. While not whole grains, they are nutritious portions of the grain and are, therefore, credited the same as whole- grain or enriched ingredients. Bran or germ will be listed along with the name of the grain (Please note that bran and germ are not creditable ingredients in the NSLP and SBP).

Some examples include: oat bran and wheat germ.

or

G. If the primary grain ingredient in the product is not creditable, does the ingredient statement list other grains that are creditable?

If you answered “yes,” documentation will be needed to determine the grams of creditable grain(s) per serving of that food product in order to be used towards meeting meal requirements.

Some examples of grain ingredients that are not creditable include: bromated flour, corn grits, degerminated cornmeal, degerminated (grain), durum flour, farina, flour, plain flour, self-rising flour, semolina flour, white flour, and wheat flour. These ingredients may only contribute to the grain component if the ingredient list indicates that they are whole or enriched. You may also obtain documentation from the manufacturer.

If you have answered “no” to all the above steps (A-G), the food product is not creditable towards the grains component of a reimbursable meal. These items may be served as an “other foods” item and used to help round out the meal as well as contribute calories and nutrients.

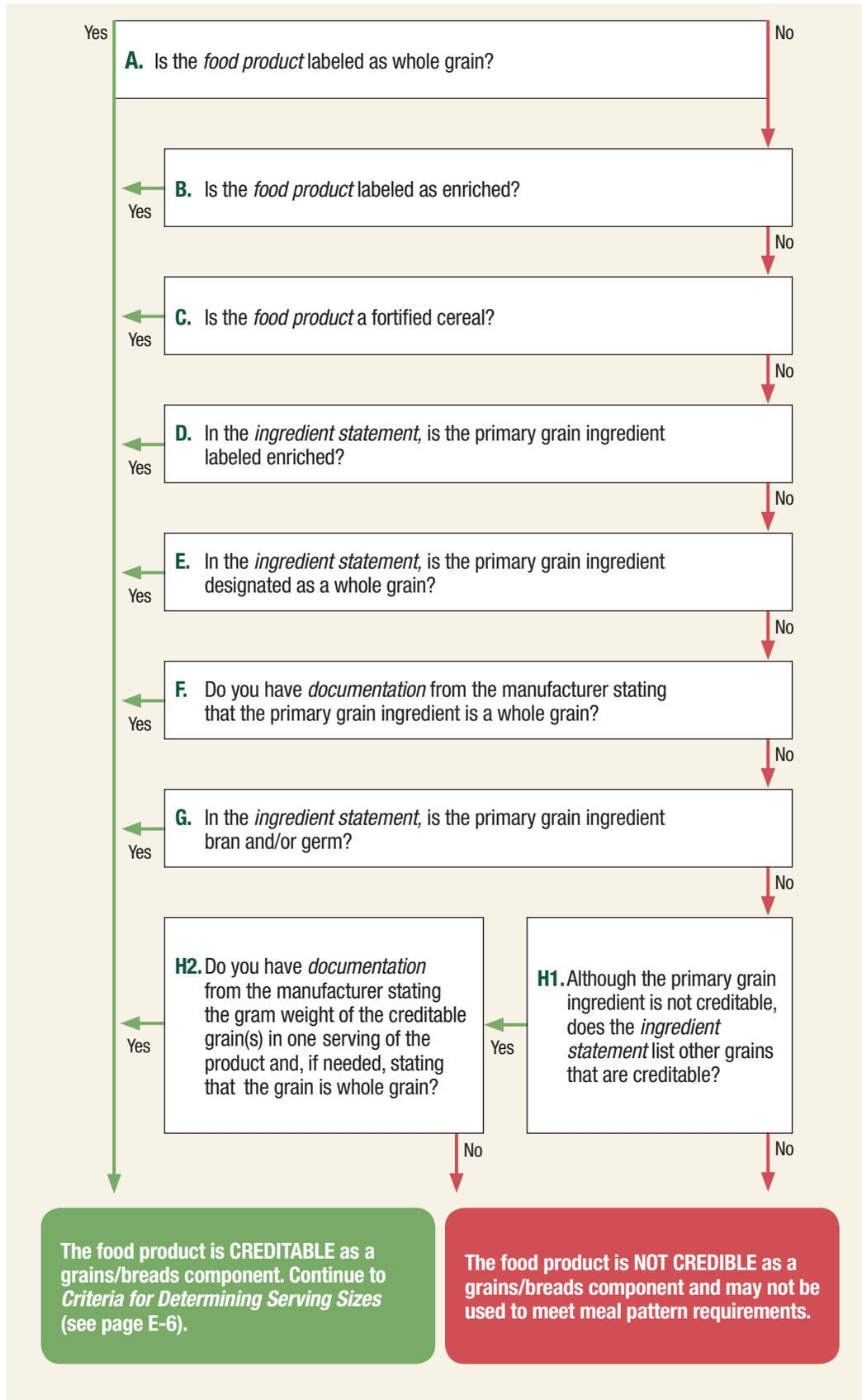
E | Appendix

Instructions for using the Grains/Breads Flow Chart

Child Nutrition Program operators need to verify that the food product is made from enriched or whole grain meal and/or flour, bran, and/or germ, or if it is a cereal, that it is whole grain, enriched, or fortified. By using the following flow chart, you can evaluate a product to determine if it is creditable towards the grains/breads component.

Once you have determined if a grains product is creditable, it is important to read through Section III “Criteria for Determining Serving Sizes.” This section will explain when to use Exhibit A (see pages E- 6 through E-7), or when to calculate grams of creditable grains (see page E-7) to determine the portion size required to provide one grains/breads serving.

Flow Chart for Determining Creditable Grains/Breads



E | Appendix

Criteria for Determining Serving Sizes

There are two different ways to determine the portion size required to provide one grains/breads serving: by using Exhibit A, or by calculating the grams of creditable grains. Please note that a food item must provide at least 0.25 serving of grains/breads to contribute to meal pattern requirements.

A. Determining Serving Sizes Based on Exhibit A:

One grains/breads serving for commonly available food products can be determined using Exhibit A (pages E-10 through E-11). The wide variety of prepared grains food products listed in Exhibit A are grouped based on their average grain content. Food types having similar concentrations of creditable grains are grouped together. Each group in Exhibit A provides the minimum serving size needed to supply one full grains/breads serving. Use Exhibit A for products that are whole grain, enriched, or fortified (if a cereal), or for products that have a creditable grain as the primary grain ingredient.

The weight needed for each group of grain food products to provide one grains/breads serving differs since different types of grains food products vary in their concentrations of enriched or whole grain meal and/or flour, bran and/or germ.

1. Exhibit A, Groups A-G

For the types of food products listed in Groups A-G, one grains/breads serving provides not less than 14.75 grams of enriched or whole grain meal and/or flour, bran and/or germ. The serving sizes (weights) given in Exhibit A, Groups A-G, may be used for grains food products that are either commercially purchased or prepared on-site.

Food products that are labeled whole grain or enriched, and food products that have a creditable grain as the primary grain ingredient, should adequately provide the minimum of 14.75 grams of creditable grains per serving (without obtaining manufacturers documentation) as long as the minimum serving sizes (weights) given in Exhibit A are met. If the product is not whole grain, enriched, or does not have a creditable grain for the primary grain ingredient, you must obtain manufacturers documentation showing the amount of creditable grain(s) in one portion of the product. Once documentation is obtained, calculate the serving size based on the grams of creditable grains as shown in step B.

Exhibit A, Groups A-G provides the weight needed for 1/4, 1/2, and 3/4 of a grains/breads serving in addition to the weight needed for one grains/breads serving.

2. Exhibit A, Groups H & I

For the types of food products listed in Groups H and I of Exhibit A to count as one grains/breads serving, the weights and volumes listed therein must be met.

When items in Groups H and I are served as cooked breakfast cereals (such as cooked oatmeal, cooked millet, cooked rice, or cold cereal), or cooked pasta, the weights and volumes listed in Exhibit A, Groups H or I must be used as noted. For example, the serving size required for one grains/breads serving of cooked oatmeal made from dry oats is 1/2 cup cooked or 25 grams dry oats.

Some of the food products in Group H, such as dry oatmeal or cornmeal, may be used as a grain ingredient in a recipe as well as a cooked cereal. When the cereal grain items listed in Group H are used as an ingredient in a recipe such as oatmeal bread or cornmeal muffins (in contrast to being used as a cooked breakfast cereal) do not use the amounts

listed in Group H. In this case, one grains serving should be determined using the finished serving weights in Groups A-G of Exhibit A, or calculated using 14.75 grams of the creditable grains in one portion of the recipe.

For example, oatmeal bread made using dry oats may be credited in two different ways: 1) using the serving weight in Group B of Exhibit A which contains “bread” since the food type is now “bread,” or 2) using the information in the following section, “Determining Serving Sizes Based on Creditable Grains Content.”

B. Determining Serving Sizes Based on Creditable Grains Content

There are some situations where the creditable grains content would be used to calculate the serving size instead of using the serving weights given in Exhibit A. Some of these situations are: 1) a product is not whole grain, enriched, or fortified (if a cereal) and the primary grain ingredient is not a creditable grain; 2) a manufacturer claims that a product can provide the minimum of 14.75 grams of creditable grains per portion using a serving size less than the weights given in Exhibit A; or 3) a product is made locally and you choose to calculate the serving size based on grams of creditable grains instead of using Exhibit A; or 4) a food product does not fit into one of the groups of Exhibit A.

In these cases, the menu planner will need to obtain documentation showing the weight of creditable grain(s) content contained in the item. This is easy for grain items prepared on-site, since the exact weight of the creditable grain ingredients can be documented based on the recipe. For purchased products, the manufacturer will need to be contacted to obtain the required documentation showing the weight of creditable grain per portion contained in a specific food product. Be aware that some manufacturers will not provide this information if they consider it proprietary information. If you have a situation where documentation is required, but the manufacturer cannot supply the documentation, you cannot use that product as a credited component of a reimbursable meal.

When the exact or minimum amount of creditable grains can be documented, the grains serving for any grains product that is not a food type in Groups H or I, may be calculated using 14.75 grams of creditable grains as one grains/breads serving.

There are three steps to determine how many creditable grains/breads servings a recipe yields:

- 1.** Divide the total grams of creditable grains¹ in the recipe by the number of portions the recipe yields: (Note: 1 lb = 453.6 grams). One “portion” is the amount of the food product you plan to serve; it is not necessarily equivalent to one grains serving.

$$\frac{\text{Total grams of creditable grains in the recipe}}{\text{Number of portions the recipe yields}}$$

This calculation gives you the total grams of creditable grains contained in one portion of your recipe.

- 2.** Divide the total grams of creditable grains in one portion by 14.75 grams: (note: 14.75 grams of creditable grains = one full grains/breads serving)

$$\frac{\text{Total grams of creditable grains in ONE portion}}{14.75 \text{ grams}} = \frac{\text{the number of grains servings}}{\text{per portion}}$$

E | Appendix

This calculation gives you the number of creditable grains/breads servings per portion of the recipe. The smallest creditable serving of the grains/breads component is 1/4 serving.

3. Round down to the nearest 1/4 grains/breads serving. To count as one full grains/breads serving, a food product must contain no less than 14.75 grams (0.52 ounces) of enriched or whole grain meal and/or flour, bran and/or germ.

¹ Creditable grains are enriched or whole grain meal and/or flour, bran and/or germ.

Worksheet for Calculating Grains/Breads Contribution for the Types of Food Products in Groups A-G, Using Grams of Creditable Grains

Instructions:

1. On the worksheet (see page E-9), list each enriched or whole grain meal and/or flour, bran and/or germ ingredient in the recipe.
2. Fill in the quantity (for example: cups, pounds, kilograms, ounces, grams, etc.) of each creditable grain ingredient in the recipe.
3. Convert the amount of each creditable grains ingredient in the recipe to grams. Use the chart below for commonly used conversions.

Conversions

Number of pounds of ingredient	x 453.6 grams
Number of ounces of ingredient	x 28.35 grams
Number of cups of enriched white flour	x 125 grams
Number of cups of regular rolled oats	x 81 grams
Number of cups of quick-cooking oats	x 81 grams
Number of cups of degermed, enriched cornmeal	x 138 grams
Number of cups of wheat bran	x 58 grams
Number of cups of wheat germ	x 115 grams
Number of cups of whole wheat flour	x 120 grams

4. Add the grams for each grain ingredient to determine the total grams of enriched or whole grain meal and/or flour, bran and/or germ in the recipe.
5. Divide the total grams of creditable grains in the recipe by the number of portions in the recipe to determine the number of grams of creditable grains per portion of food product.
6. Divide the number of grams of creditable grains per portion by 14.75 grams (reference amount of enriched or whole grain meal and/or flour, bran and/or germ in one grains/breads serving).
7. Round down to the nearest 1/4 grains/breads serving.

Worksheet

1. Creditable Grain Ingredient	2. Quantity (pounds, ounces, cups)	3. Convert to Grams (reference conversion chart)	Grams
		X	=
		X	=
		X	=
		X	=
4. Total Grams			=

5. Total grams divided by number of portions in recipe.

$$\frac{\text{Total grams creditable grains from Step 4}}{\text{Number of portions per recipe}} = \boxed{} \text{ Number of grams creditable grains per portion}$$

6. Divide the number of grams per portion by 14.75.

$$\frac{\text{Number of grams credible grains per portion from Step 5}}{14.75} = \boxed{} \text{ grains/breads serving(s)}$$

7. Round down to the nearest 1/4 grains/breads serving.

$$\text{Grains/breads serving(s) from Step 6} = \boxed{} \text{ grains/breads serving(s)}$$

E | Appendix

EXHIBIT A: Grain Requirements for Child Nutrition Programs

The following Chart titled “EXHIBIT A: Grain Requirements for Child Nutrition Programs” provides a general guideline for crediting prepared grains items.

Once you have determined that a food product is creditable toward the grains/breads component (see page E-2), find the Group on the chart containing the name of the food product. Read the minimum serving size for that group on the right-hand side of the chart.

EXHIBIT A: Grain Requirements For Child Nutrition Programs^{1,2}

Food Products per Group	Ounce Equivalent (oz eq)	Minimum Serving Size
Group A		
Bread type coating	1 oz eq = 22 gm or 0.8 oz	1 serving = 20 gm or 0.7 oz
Bread sticks (hard)	3/4 oz eq = 17 gm or 0.6 oz	3/4 serving = 15 gm or 0.5 oz
Chow Mein noodles	1/2 oz eq = 11 gm or 0.4 oz	1/2 serving = 10 gm or 0.4 oz
Savory Crackers (saltines and snack crackers)	1/4 oz eq = 6 gm or 0.2 oz	1/4 serving = 5 gm or 0.2 oz
Croutons		
Pretzels (hard)		
Stuffing (dry) <i>Note: weights apply to bread in stuffing</i>		
Group B		
Bagels	1 oz eq = 28 gm or 1.0 oz	1 serving = 25 gm or 0.9 oz
Batter type coating	3/4 oz eq = 21 gm or 0.75 oz	3/4 serving = 19 gm or 0.7 oz
Biscuits	1/2 oz eq = 14 gm or 0.5 oz	1/2 serving = 13 gm or 0.5 oz
Breads - all (for example sliced, French, Italian)	1/4 oz eq = 7 gm or 0.25	1/4 serving = 6 gm or 0.2 oz
Buns (hamburger and hot dog)		
Sweet Crackers ⁵ (graham crackers - all shapes, animal crackers)		
Egg roll skins		
English muffins		
Pita bread		
Pizza crust		
Pretzels (soft)		
Rolls		
Tortillas		
Tortilla chips		
Taco shells		
Group C		
Cookies ³ (plain - includes vanilla wafers)	1 oz eq = 34 gm or 1.2 oz	1 serving = 31 gm or 1.1 oz
Cornbread	3/4 oz eq = 26 gm or 0.9 oz	3/4 serving = 23 gm or 0.8 oz
Corn muffins	1/2 oz eq = 17 gm or 0.6 oz	1/2 serving = 16 gm or 0.6 oz
Croissants	1/4 oz eq = 9 gm or 0.3 oz	1/4 serving = 8 gm or 0.3 oz
Pancakes		
Pie crust (dessert pies ³ , cobbler ³ , fruit turnovers ⁴ , and meats/meat alternate pies)		
Waffles		
Group D		
Doughnuts ⁴ (cake and yeast raised, unfrosted)	1 oz eq = 55 gm or 2.0 oz	1 serving = 50 gm or 1.8 oz
Cereal bars, breakfast bars, granola bars ⁴ (plain)	3/4 oz eq = 42 gm or 1.5 oz	3/4 serving = 38 gm or 1.3 oz
Muffins (all, except corn)	1/2 oz eq = 28 gm or 1.0 oz	1/2 serving = 25 gm or 0.9 oz
Sweet roll ⁴ (unfrosted)	1/4 oz eq = 14 gm or 0.5 oz	1/4 serving = 13 gm or 0.5 oz
Toaster pastry ⁴ (unfrosted)		

Chart continues on next page

Food Products per Group	Ounce Equivalent (oz eq)	Minimum Serving Size
Group E		
Cereal bars, breakfast bars, granola bars ⁴ (with nuts, dried fruit, and/or chocolate pieces) Cookies ³ (with nuts, raisins, chocolate pieces and/or fruit purees) Doughnuts ⁴ (cake and yeast raised, frosted or glazed) French toast Sweet rolls ⁴ (frosted) Toaster pastry ⁴ (frosted)	1 oz eq = 69 gm or 2.4 oz 3/4 oz eq = 52 gm or 1.8 oz 1/2 oz eq = 35 gm or 1.2 oz 1/4 oz eq = 18 gm or 0.6 oz	1 serving = 63 gm or 2.2 oz 3/4 serving = 47 gm or 1.7 oz 1/2 serving = 31 gm or 1.1 oz 1/4 serving = 16 gm or 0.6 oz
Group F		
Cake ³ (plain, unfrosted) Coffee cake ⁴	1 oz eq = 82 gm or 2.9 oz 3/4 oz eq = 62 gm or 2.2 oz 1/2 oz eq = 41 gm or 1.5 oz 1/4 oz eq = 21 gm or 0.7 oz	1 serving = 75 gm or 2.7 oz 3/4 serving = 56 gm or 2 oz 1/2 serving = 38 gm or 1.3 oz 1/4 serving = 19 gm or 0.7 oz
Group G		
Brownies ³ (plain) Cake ³ (all varieties, frosted)	1 oz eq = 125 gm or 4.4 oz 3/4 oz eq = 94 gm or 3.3 oz 1/2 oz eq = 63 gm or 2.2 oz 1/4 oz eq = 32 gm or 1.1 oz	1 serving = 115 gm or 4 oz 3/4 serving = 86 gm or 3 oz 1/2 serving = 58 gm or 2 oz 1/4 serving = 29 gm or 1 oz
Group H		
Cereal Grains (barley, quinoa, etc.) Breakfast cereals (cooked) ^{6,7} Bulgur or cracked wheat Macaroni (all shapes) Noodles (all varieties) Pasta (all shapes) Ravioli (noodle only) Rice	1 oz eq = 1/2 cup cooked or 1 ounce (28 gm) dry	1 serving = 1/2 cup cooked or 25 gm dry
Group I		
Ready to eat breakfast cereal (cold, dry) ^{6,7}	1 oz eq = 1 cup or 1 ounce for flakes and rounds 1 oz eq = 1.25 cups or 1 ounce for puffed cereal 1 oz eq = 1/4 cup or 1 ounce for granola	1 serving = 3/4 cup or 1 oz, whichever is less

- ¹ In the NSLP and SBP (grades K-12), all grains served must meet whole grain-rich criteria. For information on flexibilities, please contact your State agency. For all other Child Nutrition Programs, grains are whole grain or enriched or made with enriched or whole grain meal and/or flour, bran, and/or germ. Under the CACFP child and adult meal patterns, and in the NSLP/SBP preschool meals, at least one grain serving per day must meet whole grain-rich criteria.
- ² For the NSLP and SBP (grades K-12), grain quantities are determined using ounce equivalents (oz eq). All other Child Nutrition Programs determine grain quantities using grains/bread servings. Beginning Oct. 1, 2019, grain quantities in the CACFP and NSLP/SBP infant and preschool meals will be determined using oz eq. Some of the following grains may contain more sugar, salt, and/or fat than others. This should be a consideration when deciding how often to serve them.
- ³ Allowed in the NSLP (up to 2.0 oz eq grain-based dessert per week in grades K-12) as specified in §210.10 and at snack service in the SFSP. Not allowable in the SBP. Considered a grain-based dessert and cannot count towards the grain component in the CACFP or NSLP/SBP infant and preschool meals beginning October 1, 2017, as specified in §§226.20(a)(4) and 210.10.
- ⁴ Allowable in the NSLP (up to 2.0 oz eq grain-based dessert per week for grades K-12) as specified in §210.10. May count towards the grain component in the SBP (grades K-12) and at snack and breakfast meals in the SFSP. Considered a grain-based dessert and cannot count towards the grain component in the CACFP and NSLP/SBP infant and preschool meals beginning October 1, 2017, as specified in §§226.20(a)(4) and 210.10.
- ⁵ Allowed in the NSLP (up to 2.0 oz eq grain-based dessert per week in grades K-12) as specified in §210.10. May count towards the grain component in the SBP (grades K-12), CACFP, NSLP/SBP infant and preschool meals, and SFSP.
- ⁶ Refer to program regulations for the appropriate serving size for supplements served to children aged 1 through 5 in the NSLP; breakfast served in the SBP, and meals served to children ages 1 through 5 and adult participants in the CACFP. Breakfast cereals are traditionally served as a breakfast menu item but may be served in meals other than breakfast.
- ⁷ In the NSLP and SBP, cereals must list a whole grain as the first ingredient and be fortified, or if the cereal is 100 percent whole grain, fortification is not required. For the CACFP and SFSP, cereals must be whole grain, whole grain-rich, enriched, or fortified; cereals served in the CACFP and NSLP/SBP infant and preschool meals must contain no more than 6 grams of sugar per dry ounce.

F | Appendix

Resources

Where to Order or Download Publications

Team Nutrition

Team Nutrition, an initiative of the United States Department of Agriculture's Food and Nutrition Service, supports national efforts to promote lifelong healthy food choices and physical activity by improving the nutrition practices of the Child Nutrition Programs. We provide resources to schools, child care settings, and summer meal sites that participate in these programs.

All Team Nutrition resources are available on the Team Nutrition Web site in our resource library (<https://www.fns.usda.gov/tn/resource-library>). Schools, child care providers (centers, sponsors, and day care homes), and summer meal sites that participate in USDA Child Nutrition programs may request free printed copies of certain materials. Printed materials may also be requested by the State agency administering the USDA Child Nutrition programs and school districts. Eligible entities may request printed copies using our online order form (<https://pueblo.gpo.gov/TN/TNPubs.php>).

For more information about Team Nutrition visit our website at <https://www.fns.usda.gov/tn/team-nutrition> or contact:

Team Nutrition
3101 Park Center Drive, Room 632
Alexandria, VA 22302
Phone: (703) 305-1624
Fax: (703) 305-2549
E-mail: teamnutrition@fns.usda.gov

Institute Of Child Nutrition (ICN)

The Institute of Child Nutrition (ICN), located at the University of Mississippi, is committed to improving the operation and quality of all Child Nutrition Programs. This is accomplished through staff development programs, training experiences, educational materials, and a national satellite network. The institute is the only federally funded national center dedicated to applied research, education and training, and technical assistance for child nutrition programs. It is funded by a grant from USDA's Food and Nutrition Service.

For information on food service, food preparation, meeting the Dietary Guidelines, food safety or available videos and training packages, visit the website at <http://www.theicn.org/> or contact:

Institute of Child Nutrition, The University of Mississippi
P.O. Box 1848
6 Jeanette Phillips Drive
University, MS 38677
Phone: (800) 321-3054
Fax: (800) 321-3061
E-mail: helpdesk@theicn.org

F | Appendix

Quick Website Reference Guide

Food and Nutrition Service Publications

BEST PRACTICES FOR HEALTHY SCHOOL FUNDRAISERS

<https://www.fns.usda.gov/best-practices-healthy-school-fundraisers>

MENU PLANNER FOR SCHOOL MEALS: PLANNING, PREPARING, SERVING,
AND MARKETING HEALTHY MEALS

<https://www.fns.usda.gov/tn/resource-library>

MULTICULTURAL RECIPES FOR CACFP

<https://www.fns.usda.gov/tn/cacfp-recipes>

RECIPES FOR HEALTHY KIDS COOKBOOKS: COOKBOOK FOR CHILD CARE CENTERS

<https://www.fns.usda.gov/tn/recipes-healthy-kids-cookbook-child-care-centers>

RECIPES FOR HEALTHY KIDS COOKBOOKS: COOKBOOK FOR HOMES

<https://www.fns.usda.gov/tn/recipes-healthy-kids-cookbook-homes>

RECIPES FOR HEALTHY KIDS COOKBOOKS: COOKBOOK FOR SCHOOLS

<https://www.fns.usda.gov/tn/recipes-healthy-kids-cookbook-schools>

A GUIDE TO SMART SNACKS IN SCHOOLS

<https://www.fns.usda.gov/tn/guide-smart-snacks-schools>

USDA STANDARDIZED RECIPES

<https://www.fns.usda.gov/usda-standardized-recipe>

WHOLE GRAIN RESOURCE FOR THE NATIONAL SCHOOL LUNCH AND SCHOOL
BREAKFAST PROGRAMS

<https://www.fns.usda.gov/tn/whole-grain-resource-national-school-lunch-and-school-breakfast-programs-0>

Food and Nutrition Service Useful Resources

CHILD NUTRITION PROGRAMS

<https://www.fns.usda.gov/school-meals/child-nutrition-programs>

FOOD BUYING GUIDE CALCULATOR

<http://fbg.nfsmi.org/>

FOOD BUYING GUIDE FOR CHILD NUTRITION PROGRAMS INTERACTIVE WEB-BASED TOOL

<https://foodbuyingguide.fns.usda.gov/>

FOOD BUYING GUIDE FOR CHILD NUTRITION PROGRAMS MOBILE APP

<https://www.fns.usda.gov/tn/food-buying-guide-mobile-app>

FNS, FOOD DISTRIBUTION DIVISION (FDD) — USDA FOODS

<https://www.fns.usda.gov/fdd>

FNS, USDA FOODS PRODUCT INFORMATION SHEETS FOR CHILD NUTRITION PROGRAMS
<https://www.fns.usda.gov/fdd/nslp-usda-foods-fact-sheets>

FNS HOME PAGE
<https://www.fns.usda.gov/>

TEAM NUTRITION
<https://www.fns.usda.gov/tn/team-nutrition>

TOOLS FOR SCHOOLS
<https://www.fns.usda.gov/healthierschoolday/tools-schools>

WHAT'S COOKING USDA MIXING BOWL
<https://whatscooking.fns.usda.gov/>

Institute of Child Nutrition Resource Center

ICN RESOURCES AND DOCUMENTS
<http://www.theicn.org>

United States Department of Agriculture Useful Resources

AGRICULTURAL MARKETING SERVICE (AMS)
<https://www.ams.usda.gov/>

FOOD AND NUTRITION INFORMATION CENTER (FNIC)
<https://www.nal.usda.gov/fnic>

FOOD SAFETY AND INSPECTION SERVICE (FSIS)
<https://www.fsis.usda.gov>

NATIONAL AGRICULTURAL LIBRARY (NAL)
<https://www.nal.usda.gov/>

NATIONAL NUTRIENT DATABASE FOR STANDARD REFERENCE
<https://ndb.nal.usda.gov/>
<http://www.ars.usda.gov/services/docs.htm?docid=8964>

DIETARY GUIDELINES FOR AMERICANS
<https://health.gov/DietaryGuidelines/>

Other Federal Resources

CENTER FOR FOOD SAFETY AND APPLIED NUTRITION (CFSAN)
<https://www.fda.gov/food/>

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
<https://www.cdc.gov/>

F | Appendix

FEDERAL REGISTER

<https://www.federalregister.gov/>

FOOD AND DRUG ADMINISTRATION (FDA)

<https://www.fda.gov/>

NUTRITION.GOV

<https://www.nutrition.gov/>

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)

<https://www.epa.gov/>

Food Safety Resources

CENTERS FOR DISEASE CONTROL AND PREVENTION FOOD SAFETY

<https://www.cdc.gov/foodsafety/>

FIGHT BAC! PARTNERSHIP FOR FOOD SAFETY EDUCATION

<http://www.fightbac.org/>

FOOD SAFETY AND INSPECTION SERVICE (FSIS)

<https://www.fsis.usda.gov>

FOODSAFETY.GOV (including Food Recalls and Alerts)

<https://www.foodsafety.gov/>

FOOD SAFE SCHOOLS ACTION GUIDE

<http://foodsafeschools.org/>

INSTITUTE OF CHILD NUTRITION FOOD SAFETY ONLINE COURSES

<http://www.theicn.org>

FSIS MOBILE APPLICATIONS

<https://www.fsis.usda.gov/wps/portal/fsis/newsroom/meetings/feeds-and-subscriptions/apps>

Food and Nutrition Service Regional Offices

Mid-Atlantic Regional Office

Mercer Corporate Park
300 Corporate Boulevard
Robbinsville, NJ 08691-1598
(609) 259-5025

Delaware, District of Columbia, Maryland, New Jersey, Pennsylvania, Puerto Rico, Virginia, Virgin Islands, West Virginia

Southeast Regional Office

61 Forsyth Street SW, Room 8T36
Atlanta, GA 30303-3415
(404) 562-1800

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

Midwest Regional Office

77 West Jackson Boulevard, 20th Floor
Chicago, IL 60604-3507
(312) 353-6664

Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

Southwest Regional Office

1100 Commerce Street, Room 5-A-6
Dallas, TX 75242-9980
(214) 290-9800

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Mountain Plains Regional Office

1244 Speer Boulevard, Suite 903
Denver, CO 80204-3581
(303) 844-0300

Colorado, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming

Western Regional Office

550 Kearny Street, Room 400
San Francisco, CA 94108-2518
(415) 705-1310

Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon, Washington, Guam Trust Territories, Commonwealth of the Mariana Islands, American Samoa

Northeast Regional Office

10 Causeway Street, Room 501
Boston, MA 02222-1069
(617) 565-6370

Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont

