



CREDITING IN ACTION: DETERMINING MEAL PATTERN CONTRIBUTIONS

Now that you've learned how to identify foods that are creditable toward the meal pattern components, let's learn how to determine the meal pattern contribution (credit) for each meal component. This is an important step to ensure meals served are nutritious and meet Federal meal pattern requirements.

A food credits based on how it contributes to the following meal components:

1. **Meats/Meat Alternates**
2. **Grains**
3. **Vegetables**
4. **Fruits**
5. **Milk**

The *Food Buying Guide for Child Nutrition Programs*, commonly referred to as the *Food Buying Guide* (FBG), is the resource developed by USDA to help you determine how much food to purchase and how each food credits toward the meal components. The FBG is available as a:

- *Food Buying Guide* Interactive Web-Based Tool
- Downloadable *Food Buying Guide*
- *Food Buying Guide* Mobile App (Includes search and navigation, comparison features for yield information, the Exhibit A Grains Tool, and the ability for users to create and save favorite foods lists.)

See the Resource Section on page 134 for additional information on the *Food Buying Guide*.

You can use the *Food Buying Guide* Interactive Web-Based Tool to determine yields, and the *Recipe Analysis Workbook (RAW)* to determine the meal pattern contribution (credit) of foods or recipes, and the *Exhibit A Grains Tool* to determine the ounce equivalent (oz eq) grains or grains/breads serving(s) for grain products. For more information on the FBG, see the Resource Section on page 134.

You can use the FBG to determine crediting for combination foods such as pizza or lasagna that contribute to more than 1 meal component. For example, pizza typically includes grains in the crust, a meat or meat alternate (such as cheese), vegetables (such as tomato paste and mushrooms), and sometimes a fruit topping (such as pineapple). Remember, in order for a meal component to contribute toward a reimbursable meal, food must contain at least the following minimum amounts:

1. **Meats/Meat Alternates: at least 0.25 (¼) ounce equivalent per serving**
2. **Grains: at least 0.25 (¼) ounce equivalent per serving**
3. **Vegetables: at least ⅛ cup (2 tablespoons) per serving**
4. **Fruits: at least ⅛ cup (2 tablespoons) per serving**
5. **Milk: at least ¼ cup (2 fluid ounces) per serving**
 - Milk is only creditable when served in a beverage or over cereal. It only credits with other meal components when contained in a smoothie.

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DOCUMENTING MEAL PATTERN CONTRIBUTION

During a program review, the State agencies are responsible for checking your documentation to ensure meal pattern requirements are met. Check with your State Agency (SA) if you are unsure if a food is creditable or if you have questions on what type of documentation is needed. Documentation may include **1** or more of the following:

- *Food Buying Guide*
- Actual food product label with ingredient statement

- Standardized recipe
- Valid Child Nutrition (CN) labels
- Product Formulation Statement (PFS) or other manufacturer documentation

For example, if you use a standardized recipe to prepare a burrito from scratch, no other documentation is needed. To properly document the meal pattern contribution of a commercial burrito, you would need a PFS or a CN label.





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CREDITING COMMERCIALY PROCESSED FOODS

The *Food Buying Guide* lists a number of standard commercially processed foods; for example, baked beans, canned tuna, and ground chicken. If the name on the product label exactly matches the FBG description in the “Food as Purchased, AP” column, you may use the yield information in the FBG to determine the meal pattern contribution (credit) of that food. For example, Vegetarian Baked Beans in Sauce:

Section 1 - Meats/Meat Alternates

1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size per Meal Contribution	5. Purchase Units for 100 Servings	6. Additional Information
BEAN PRODUCTS (continued)					
Bean Products, dry beans, canned, Beans Baked in Sauce, Vegetarian <i>Includes USDA Foods</i>	No. 300 Can (16 oz)	6.94	1/4 cup heated beans with sauce	14.50	1 No. 300 can = about 1 3/4 cups heated beans with sauce
	No. 300 Can (16 oz)	4.62	3/8 cup heated beans with sauce	21.70	1 No. 300 can = about 1 3/4 cups heated beans with sauce

(Example of a commercially processed canned food from the *Food Buying Guide*.)

When crediting combination food products (food items that contribute to more than 1 meal component), only the amount of the food that contributes to each component is counted. For example, pizzas, chicken nuggets, and ravioli count toward the meats/meat alternates component. The amount of meat/meat alternate per serving is used for crediting purposes, not the total portion size which includes other ingredients. Combination foods may contain varied amounts from a meal component. Due to the uncertainty of the actual amount of the meal components contained in the commercial combination food product, for example meat/meat alternate, they cannot be served as part of a reimbursable meal if they are not in the FBG unless:

- They are CN labeled;

OR

- You obtain a Product Formulation Statement (PFS) from the manufacturer that shows how the creditable amount was determined.

Remember that only CN-labeled commercially prepared products provide a warranty on the crediting information on the label. See page 5 for additional information on the Child Nutrition (CN) Labeling Program.

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There are varying amounts of food components, such as meat/meat alternate, contained in commercially prepared entrée products. In some cases, you may need to serve a very large portion in order to meet meal pattern requirements. For example, a 15-ounce serving of canned ravioli is needed to provide the required 1½ ounce equivalent meat/meat alternate for children ages 3 through 5, but this quantity of ravioli greatly exceeds the ¼ cup meal pattern requirement for grains. This may be too large of a portion size for preschool children ages 3 through 5 years old. In this instance, it may be best to serve a smaller portion of canned ravioli with a second meat/meat alternate choice to complete the required meat/meat alternate serving size for that meal.

Crediting Recipes

Now let's practice determining how a recipe credits toward the CACFP meal pattern requirements. Determining meal pattern contributions for recipes is an important step in ensuring that meals served are nutritious and meet the CACFP meal pattern requirements.

The *Food Buying Guide* Recipe Analysis Workbook (RAW) is available to help simplify the way you calculate meal pattern contributions for standardized recipes. The RAW is available on the *Food Buying Guide* Interactive Web-Based Tool. We'll use this tool to credit the first recipe. The FBG (Appendix A) contains additional examples for crediting recipes using the RAW. See the Resource Section on page 134 for information to access the FBG.

You can use the *Food Buying Guide* Recipe Analysis Workbook (RAW) on the *Food Buying Guide* Interactive Web-Based Tool to help simplify the way you calculate meal pattern contributions for recipes. The online tool contains a user guide and training videos to help you use the RAW to credit recipes toward meal pattern requirements.



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Hands-On Practice: Crediting a Recipe Toward Meal Pattern Requirements

Gingered Carrots—Makes 25 servings (¼ cup per serving)

Ingredients	Weight	Measure
Fresh Carrots, sliced diagonally	2 lbs 9½ oz	2 qts 1 cup
Water	32 fl oz	1 qt
Margarine, <i>trans</i> fat free		1 Tbsp 1 tsp
Honey		¼ cup
Lemon Juice		1 Tbsp 1 tsp
Grated Ginger, fresh		2 tsp

*The creditable ingredient is in bold.

Using the FBG Interactive Web-Based Tool Recipe Analysis Workbook (RAW), follow these steps to calculate the vegetable contribution per serving:

Step 1: Use the search feature in the RAW to find the food item most similar to the carrots, fresh, sliced from the recipe. Enter carrots in the search and click “search.”

Search Results

Meal Component	Category / Subcategory	Food As Purchased, AP	Purchase Unit	Servings per Purchase Unit, EP	Serving Size per Meal Contribution	Additional Information	Add to RAW
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Without tops</i>	Pound	10.30	1/4 cup raw vegetable strips (about 3 strips, 4 inch by 1/2 inch)	1 lb AP = 0.70 lb ready-to-cook, or serve raw carrot sticks	Add
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Without tops</i>	Pound	10.60	1/4 cup raw, chopped vegetable	1 lb AP = 0.83 lb trimmed, peeled carrots	Add
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Without tops</i>	Pound	15.40	1/4 cup raw, shredded vegetable	1 lb AP = 0.83 lb (about 3-3/4 cups) trimmed, peeled, shredded carrot	Add
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Without tops</i>	Pound	8.10	1/4 cup raw, shredded vegetable with dressing	1 lb AP = 0.83 lb (about 3-3/4 cups) trimmed, peeled, shredded carrot	Add
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Without tops</i>	Pound	8.83	1/4 cup cooked, drained, shredded vegetable	1 lb AP = 0.79 lb (about 2-1/8 cups) trimmed, peeled, shredded, cooked carrot; 1 lb AP = 0.83 lb (about 3-3/4 cups) trimmed, peeled, shredded carrot	Add
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Without tops</i>	Pound	10.90	1/4 cup raw, sliced vegetable (5/16 inch slices)	1 lb AP = 0.83 lb (about 2-2/3 cups) trimmed, peeled, sliced carrots	Add
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Without tops</i>	Pound	8.16	1/4 cup cooked, drained, sliced vegetable (5/16 inch slices)	1 lb AP = 0.76 lb (about 2 cups) cooked, sliced carrots; 1 lb AP = 0.83 lb (about 2-2/3 cups) trimmed, peeled, sliced carrots	Add
Vegetables	Red/Orange Vegetables CARROTS	Carrots, fresh <i>Shredded, Ready-to-use</i>	Pound	19.90	1/4 cup raw vegetable	1 lb AP = 1 lb shredded carrots ready-to-use (about 4-7/8 cups)	Add

Carrots, fresh
Without tops

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Step 2: Choose the food item that most closely matches both the form of the food as it is purchased and as served in the prepared recipe. The carrots in this recipe are purchased raw, but will then be cooked. Choose the option for “carrots, fresh, *without tops*” which will provide 8.16 servings (1/4 cups) of cooked, drained, sliced vegetable per pound.

You can select the item by clicking on the green “Add” button.

Step 3: Identify the **Purchase Unit:**

Pound

Step 4: Now, we’ll go to the vegetables tab to finish crediting the amount of carrots in our recipe.

Step 5: Enter the quantity of carrots in the recipe (2 lbs 9½ oz) into the **Quantity of Ingredient** field. Please note you must convert the quantity to pounds in decimals (2.5937). Then locate the preparation yield of 0.83 (from the **Additional Information** column) and enter into the Preparation Yield (if applicable) field.

*The number from the **Additional Information** column is used to determine how many **pounds of carrots** to purchase.

Note: 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 *Food Buying Guide*. If several options are available in *Additional Information*, column 6, choose the yield data that most closely matches the form of the recipe ingredient.

Create Recipe Analysis Workbook (RAW)

Instructions

Asterisks (*) denote required information.

Recipe Name * Servings per Recipe *
 Recipe Number Serving Size *

Select Creditable Ingredient | Recipe Notes | **Vegetables** | Fruit | Meats/MA | Grains - Method A | Grains - Method B | Grains - Method C | **Meal Pattern Contribution**

Red/Orange Vegetables

Food As Purchased, AP	Purchase Unit	Servings per Purchase Unit, EP	Serving Size per Meal Contribution	Additional Information	Quantity of Ingredient	Preparation Yield (If applicable)	Calculated Quantity to Purchase
Carrots, fresh Without tops	Pound	8.16	1/4 cup cooked, drained, sliced vegetable (5/16 inch slices)	1 lb AP = 0.76 lb (about 2 cups) cooked, sliced carrots; 1 lb AP = 0.83 lb (about 2-2/3 cups) trimmed, peeled, sliced carrots	<input type="text" value="2.5937"/>	<input type="text" value=".83"/>	3.1249

You must save the RAW prior to printing it. Use the "Back to RAW List" button and select from the RAW list. Click the PDF link to generate a copy to print or save.

[Save](#) [Back to RAW List](#)



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Step 6: Now you can go to the **Meal Pattern Contribution** tab to view how the carrots credit (in volume served) toward the meal pattern:

Select Creditable Ingredient	Recipe Notes	Vegetables	Fruit	Meats/MA	Grains - Method A	Grains - Method B	Grains - Method C	Meal Pattern Contribution
		Vegetables						Red/Orange Vegetables 1/4 cup

1/4 cup provides 1/4 cup total vegetable (1/4 cup red/orange vegetable)

Please note that:

- **For School Meals and CACFP:** Raw leafy green vegetables credit as half the volume served (For example: 1 cup raw spinach credits as 1/2 cup dark green vegetable)
- **For School Meals and CACFP:** Dried fruits credit as double the volume (For example, 1/2 cup raisins credits as 1 cup fruit).
- **For School Meals Only:** Any quantity remaining after the credit has been determined for each vegetable subgroup is combined to ensure the maximum credit for the vegetables. If this combined quantity provides a minimum of 1/8 cup, it is credited towards the Additional Vegetables. If the RAW contains no Starchy vegetables, then the program operator may instead choose to manually credit the remaining Additional Vegetables towards the Other Vegetables subgroup.

This recipe provides 25 servings (1/4 cup each) of carrots. You can save or print a copy for your files.

You can see how simple it is to use the *Food Buying Guide's* RAW as you determine meal pattern contributions of recipes. We'll credit the remaining recipes using hand calculations to show you an alternative method for determining meal pattern contribution of recipes. The FBG (Appendix A) contains Recipe Analysis Workbook (RAW) templates you may use to do the hand calculations. See the Resource Section on page 134 for information to access the FBG.

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Mango Smoothie Bowl—Makes 25 servings

Ingredients	Weight	Measure
Low-Fat Greek Yogurt	6 lbs 4 oz	3 qts 3 cups
Frozen Mangoes, diced	5 lbs	3 qts 3 cups
Agave Syrup		¼ cup
Vanilla Extract		

*The creditable ingredients are in bold.

Using the FBG, follow these steps to calculate the ounce equivalent meat alternate contribution for low-fat Greek yogurt per serving and to determine how much of the low-fat Greek yogurt to purchase for the recipe:

Step 1: Find the food item most similar to **low-fat Greek yogurt**. Choose the food item that most closely matches both the form of the food as it is purchased and as served in the prepared recipe.

Section 1 - Meats/Meat Alternates

1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size per Meal Contribution	5. Purchase Units for 100 Servings	6. Additional Information
YOGURT					
Yogurt, fresh⁴⁵ <i>Plain or Flavored, Sweetened or Unsweetened, Commercially Prepared, (includes Greek yogurt)</i>	32 oz Container	8.00	1/2 cup or 4 oz yogurt provides 1 oz meat alternate	12.50	
	32 oz Container	5.33	3/4 cup or 6 oz yogurt provides 1-1/2 oz meat alternate	18.80	

Yogurt, fresh
Plain or Flavored, Sweetened or Unsweetened, Commercially Prepared, (includes Greek yogurt)



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Step 2: Identify the **Purchase Unit**:

32 ounce container

Step 3: Convert the 6 lbs 4 oz of low-fat Greek yogurt to ounces to match the ounces in the **Purchase Unit**:

$6 \text{ lb} \times 16 \text{ oz per lb} = 96 \text{ oz}$

Add 4 oz to 96 oz = 100 oz

There are 100 oz of low-fat Greek yogurt in this recipe.

Step 4: Determine how many 32-ounce containers of yogurt you need (the calculated quantity to purchase) by dividing the 100 oz of yogurt in the recipe by 32 oz (the weight of the **Purchase Unit**):

$100 \text{ oz} \div 32 \text{ oz in a container of yogurt} = 3.125 \text{ containers of yogurt}$. This calculates the quantity of 32-ounce containers of yogurt to purchase (the number of containers required) to yield 100 oz

Step 5: Find the **Servings per Purchase Unit, EP** (edible portion) for the yogurt, fresh that provides a 1 oz eq meat alternate (found under **Serving Size** column):

8.00

Step 6: Calculate the number of ounces of meat alternate in the recipe:

$3.125 \text{ containers of yogurt (32 oz each)} \times 8 \text{ Servings per Purchase Unit, EP} = 25 \text{ total oz eq meat alternate}$

Step 7: Divide the total oz eq of meat alternate by the number of servings per recipe to determine the oz eq of meat alternate per serving:

$25 \text{ oz} \div 25 \text{ servings per recipe} = 1.0 \text{ oz eq meat alternate per serving}$.

There is a total of 1 oz eq meat/ meat alternate per serving.

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Using the FBG, follow these steps to calculate the fruit contribution per serving for the frozen mangoes, diced:

Section 3 - Fruits

1. Food As Purchased, AP	2. Purchase Unit	3. Servings per Purchase Unit, EP	4. Serving Size per Meal Contribution	5. Purchase Units for 100 Servings	6. Additional Information
MANGOES					
Mangoes, fresh <i>Whole</i>	Pound	7.60	1/4 cup cubed or sliced fruit	13.20	1 lb AP = 0.69 lb ready-to-serve raw mangoes

Step 1: Find the food item most similar to the frozen mangoes, diced in the recipe. The FBG does not contain information on frozen mangoes. The most similar item is mangoes, fresh, *whole*. Choose the food item that most closely matches both the form of the food as it is purchased and as served in the prepared recipe.

Key Tip: The *Food Buying Guide* contains more than 2,100 food items that are typically served in Child Nutrition Program settings, but it does not contain every food item available. If your food item is not in the FBG, you can use the item most similar to that food. Document which similar food item was used to determine the meal pattern contribution.

Step 2: Identify the **Purchase Unit:**
Pound

Step 3: Because the fresh mangoes are purchased whole and your recipe calls for frozen, diced mangoes, you must convert the quantity of frozen mangoes to match the form of the mangoes as listed under the **Food As Purchased, AP** column.

The **Additional Information** column for the mangoes, fresh, *whole* states, “1 lb AP = 0.69 lb ready-to-serve raw mangoes,” meaning that 1 lb as purchased of fresh, whole mangoes yields 0.69 lb of ready-to-serve mangoes after the mango is peeled, seeded, and diced (0.69 lb is the preparation yield factor).

Preparation Yield Factor

The preparation yield factor is the percent of food lost during preparation of the ingredient. It is the quantity of ready-to-cook or cooked food you will get from a pound of food as purchased.



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Step 4: Determine the quantity of fresh mangoes required (the calculated quantity to purchase) to provide the quantity of frozen mangoes in the recipe. Divide the weight of the frozen mangoes by the preparation yield:

5 lbs frozen mangoes ÷ 0.69 lb preparation yield = 7.24638 lbs calculated quantity to purchase of the mangoes, fresh, *whole*.

Step 5: Find the **Servings per Purchase Unit, EP** (edible portion) for the mangoes, fresh, *whole* that provide ¼ cup cubed fruit (found under **Serving Size** column):
7.60

Step 6: Calculate the number of ¼ cups of cubed fruit in the recipe using the calculated quantity to purchase:
7.24638 lbs mangoes, fresh, *whole* x 7.6 **Servings per Purchase Unit, EP** = 55.07246 total ¼ cups fruit.

Step 7: Convert the ¼ cups to cups:
55.07246 total ¼ cups ÷ 4 = 13.76812 cups.

Step 8: Divide the total cups by the number of servings per recipe to determine the total cups of fruit per serving:
13.76812 cups ÷ 25 servings per recipe = 0.55072 cup fruit per serving.

Step 9: Round down to the nearest ⅛ cup (see the table below for converting decimal equivalents to the nearest portion of a cup):
0.55072 cup rounds down to 0.5 cup = ½ cup.

Always rounding down to the nearest ⅛ cup helps ensure the fruit items offered will never contain less credit than what is claimed.

Converting Decimal Equivalents to the Nearest Portion of a Cup for Fruits and Vegetables

If decimal equivalent is	The recipe contributes
0.125 - 0.249	1/8 cup
0.250 - 0.374	1/4 cup
0.375 - 0.499	3/8 cup
0.500 - 0.624	1/2 cup
0.625 - 0.749	5/8 cup
0.750 - 0.874	3/4 cup
0.875 - 0.999	7/8 cup
1.000 - 1.124	1 cup

Use the ranges in the table to identify the servings of fruit in the recipe. You can use this table to identify the amount of fruits or vegetables in any recipe.

A Mango Smoothie Bowl contains a total of ½ cup fruit per serving.

Step 10: Write your meal pattern contribution crediting statement to state how the recipe credits toward the CACFP meal pattern requirements:
1 smoothie bowl with ⅔ cup (about 6½ oz) mango smoothie provides 1 oz eq meat/meat alternate and a ½ cup of fruit.

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CREDITING GRAIN ITEMS

This handbook focuses on using ounce equivalent to credit grains and specifically how to use Exhibit A (found on page 94) to credit grain products in ounce equivalents. See page 124 for information on calculating ounce equivalent. You may also find information on how to credit foods using grains/breads servings in Exhibit A or the *Food Buying Guide*.

Ounce Equivalents versus Grains/Breads Servings

EXHIBIT A: GRAINS REQUIREMENTS FOR CHILD NUTRITION PROGRAMS^{1,2}

Color Key: Footnote 5 = Blue, Footnote 3 or 4 = Red

Group A	Ounce Equivalent (oz eq) for Group A	Minimum Serving Size for Group A
<ul style="list-style-type: none"> Bread coating Bread sticks (hard) Chow mein noodles Savory crackers (saltines and snack crackers) 	1 oz eq = 22 g or 0.8 oz ¾ oz eq = 17 g or 0.6 oz ½ oz eq = 11 g or 0.4 oz ← ¼ oz eq = 6 g or 0.2 oz	1 serving = 20 g or 0.7 oz ¾ serving = 15 g or 0.5 oz ← ½ serving = 10 g or 0.4 oz ¼ serving = 5 g or 0.2 oz
Group B	Ounce Equivalent (oz eq) for Group B	Minimum Serving Size for Group B
<ul style="list-style-type: none"> Bagels Batter type coating Biscuits Breads—all (for example sliced, French, Italian) 	1 oz eq = 28 g or 1.0 oz ← ¾ oz eq = 21 g or 0.75 oz ½ oz eq = 14 g or 0.5 oz ¼ oz eq = 7 g or 0.25 oz	1 serving = 25 g or 0.9 oz ← ¾ serving = 19 g or 0.7 oz ½ serving = 13 g or 0.5 oz ¼ serving = 6 g or 0.2 oz

Exhibit A: Grain Requirements for Child Nutrition Programs with ounce equivalent and serving highlighted.

As a reminder, an ounce equivalent of grains is slightly heavier (16 grams of grains) than a grains serving (14.75 grams of grains).

Examples of using *Exhibit A*:

If you want to meet half of the grains component with crackers and each cracker weighs 5 grams, you need to serve:

- 2 crackers (10 grams total weight) to meet the minimum serving requirement for a ½ serving of grains
- 3 crackers (15 grams total weight) to ensure you serve at least the 11 grams required for a ½ ounce equivalent of grains.

If you want to meet both the 1 serving and the ounce equivalent grains with a slice of bread that weighs 28 grams per slice, you need to serve:

- 1 slice of bread (28 grams total weight) to meet the minimum serving requirement for 1 grains serving (25 grams).
- 1 slice of bread (28 grams total weight) to meet the 1 ounce equivalent grains requirement (28 grams).

In this example, you need to serve the same amount of bread (1 slice that weighs 28 grams per slice) to meet both the minimum serving for 1 grains serving and for 1 ounce equivalent grains.



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Beginning October 1, 2021, grains must be credited using ounce equivalents in the CACFP. Until that time, you may credit based on either grains servings or ounce equivalents.

The final rule requires that grains be credited using ounce equivalents instead of grains/breads servings as credited under the previous meal pattern requirements. This change is consistent with the 2015-2020 Dietary Guidelines for Americans (Dietary Guidelines), which provide grain recommendations in ounce equivalents.

To determine the ounce equivalent of grains or the grains/breads servings in a recipe containing grain ingredients, use **1** of the following methods:

- Use the weights provided in Exhibit A.
- Or
- Information in the FBG
- Or
- Calculate the **ounce equivalent grains** or the **grains servings** based on the grams of creditable grain in a food product.
 - Please note, it takes 16 g of creditable grain to provide 1 oz eq grains:
 - Divide the total grams of whole-grain or enriched meal and/or flour, bran, or germ in the recipe by the number of servings the recipe yields and then divide by 16 g to determine the oz eq grains.

For example, 600 g of creditable grains in the recipe divided by 25 servings = 24 g of creditable grains per serving divided by 16 g per oz eq = 1.5 oz eq grains per serving.

$600 \div 25 \div 16 \text{ g per oz eq} = 1.5 \text{ oz eq per serving.}$

- Please note, it takes 14.75 g of creditable grains to provide 1 grains/breads serving:
 - Divide the total grams of whole-grain or enriched meal and/or flour, bran, or germ in the recipe by the number of servings that the recipe yields and then divide by 14.75 g to determine the grains/breads servings.

For example, 600 g of creditable grains in the recipe divided by 25 servings = 24 g of creditable grains per serving divided by 14.75 g per oz eq = 1.62711 grains/breads servings.

$600 \div 25 \div 14.75 \text{ g per grains serving} = 1.62711 \text{ grains servings. Round down to the } 0.25 \text{ amount} = 1.5 \text{ grains/breads servings.}$

For the types of food items listed in Exhibit A, Groups H and I, in order for the food item to count as a 1 ounce equivalent or a grains/breads serving, you must use the weights and volumes listed in the appropriate group.

Always round down to the nearest 0.25 amount. For example 1.0, 1.25, 1.5, 1.75. Rounding down helps to ensure the grain items offered will never contain less credit than what is claimed.

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Grains Servings Versus Ounce Equivalents—Make the Conversion

EXHIBIT A: GRAINS REQUIREMENTS FOR CHILD NUTRITION PROGRAMS^{1,2}

Color Key: Footnote 5 = Blue, Footnote 3 or 4 = Red

Group H	Ounce Equivalent (oz eq) for Group H	Minimum Serving Size for Group H
<ul style="list-style-type: none"> • 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 = ½ cup cooked or 1 oz (28 g) dry	1 serving = ½ cup cooked or 25 g dry
Group I	Ounce Equivalent (oz eq) for Group I	Minimum Serving Size for Group I
<ul style="list-style-type: none"> • Ready-to-eat breakfast cereal (cold, dry)^{6,7} 	1 oz eq = 1 cup or 1 oz for flakes and rounds 1 oz eq = 1¼ cups or 1 oz for puffed cereal 1 oz eq = ¼ cup or 1 oz for granola	1 serving = ¾ cup or 1 oz, whichever is less



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Hands-On Practice: Crediting Grain Products Toward Meal Pattern Requirements

For grain products listed in Groups A-G of Exhibit A, each portion must contain at least 16 grams of whole-grain and/or enriched meal and/or flour, bran, or germ to provide a 1 ounce equivalent.

Let's look at a few examples.

Examples for Calculating the Grains Credit for Whole Grain-Rich or Enriched Bread

Enriched Wheat Sandwich Bread

You may purchase bread products from your local grocery store. For these types of commercial products, you may compare the weight per serving information on the Nutrition Facts label of the package against the applicable group in Exhibit A. For example:

Nutrition Facts

23 servings per container

Serving size 1 slice (31g)

Amount per serving

Calories 70

% Daily Value*

Total Fat 1g 2%

Saturated Fat 0g 0%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 140mg 6%

Total Carbohydrate 15g 5%

Dietary Fiber 2g 8%

Total Sugars 1g

Includes 1g Added Sugars 2%

Protein 3g

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Step 1: Find the Serving Size on the Nutrition Facts label on the package of Enriched Wheat Sandwich Bread:

1 serving bread = 1 slice = 31 g

Step 2: Find bread in Exhibit A under Group B which reads:

Breads – all (for example sliced, French, Italian) 1 oz eq = 28 g or 1.0 oz

Step 3: Divide 31 g per slice by 28 g per oz eq:

$31 \div 28 = 1.107$ oz eq per serving

Step 4: Round 1.107 oz eq down to nearest 0.25 oz eq. There is 1.0 oz eq grains per slice of bread.

Step 5: Record the quantity served and the grains contribution. For example: 1 slice enriched bread (1 oz eq grains).

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Tortilla (made with enriched grains)

Nutrition Facts	
10 servings per package	
Serving size	1 tortilla (49g)
Amount per serving	
Calories	140
% Daily Value*	
Total Fat 3.5g	5%
Saturated Fat 1.5g	8%
<i>Trans</i> Fat 0g	
Cholesterol 0mg	0%
Sodium 420mg	18%
Total Carbohydrate 24g	8%
Dietary Fiber 1g	4%
Total Sugars 1g	
Includes 1g Added Sugars	2%
Protein 4g	

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Step 1: Find the Serving Size on the Nutrition Facts label on the package of tortillas:

$$1 \text{ tortilla} = 49 \text{ g}$$

Step 2: Find tortillas in Exhibit A under Group B which reads:

$$\text{Tortillas } 1 \text{ oz eq} = 28 \text{ g or } 1.0 \text{ oz}$$

Step 3: Divide 49 g per tortilla by 28 g per oz eq:

$$49 \div 28 = 1.75 \text{ oz eq per tortilla}$$

Step 4: Record the quantity served and the oz eq. For example: 1 enriched flour tortilla (1.75 oz eq grains).



CREDITING IN ACTION: DETERMINING MEAL PATTERN CONTRIBUTIONS

Crackers

(made with enriched grains)

Nutrition Facts

About 4 servings per container
Serving size 30g (8 crackers)

Amount per serving

Calories 140

% Daily Value*

Total Fat 4.5g **7%**

Saturated Fat 2g **10%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 280mg **12%**

Total Carbohydrate 23g **8%**

Dietary Fiber 1g **4%**

Total Sugars 1g

Includes 1g Added Sugars **2%**

Protein 2g

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Step 1: Find the Serving Size on the Nutrition Facts label on the package of Crackers

1 serving = 30 g (8 crackers)

Step 2: Find crackers in Exhibit A under Group A which reads:

Savory Crackers (saltines and snack crackers) 1 oz eq = 22 g or 0.8 oz

Step 3: Divide 30 g per 8 crackers by 22 g per oz eq:

$$30 \div 22 = 1.36 \text{ oz eq per serving.}$$

Step 4: Round 1.36 oz eq down to nearest 0.25 oz eq = 1.25 oz eq per serving of 8 crackers.

Step 5: Record the quantity served and the oz eq. For example: 8 enriched grain crackers (1.25 oz eq grains).

To determine how many crackers you need to serve to provide 1 oz eq of grains, you can do a simple calculation:

Step 1: 22 g per 1 oz eq from Exhibit A divided by 30 g per serving of 8 crackers from the Nutrition Facts label equals 73 percent:

$$22 \div 30 = 0.73 \text{ (73\%)}$$

Step 2: Multiply 0.73 by 8 crackers to determine how many crackers are needed to provide 1 oz eq grains:

$$0.73 \times 8 = 5.86 \text{ crackers}$$

Step 3: Round 5.86 crackers up to the next whole cracker:

Round up to 6 crackers

CREDITING IN ACTION: DETERMINING MEAL PATTERN CONTRIBUTIONS

Examples for Calculating the Grains Credit for Whole Grain-Rich or Enriched Pasta

There are 3 methods to calculate an ounce equivalent of pasta:

- 1. Cooked volume based on Exhibit A: Pasta is in Group H of Exhibit A.**
 - As a reminder, for any items listed in Group H of Exhibit A, a ½ cup of cooked pasta provides 1 oz eq grains.
- 2. Dry weight of the pasta: The standard weight for dry grain is 28 g per oz eq.**
- 3. Grams of creditable grains per serving.**

Dry Pasta

Nutrition Facts	
8 servings per container	
Serving size	32g
Amount per serving	
Calories	100
% Daily Value*	
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 20g	7%
Dietary Fiber 4g	14%
Total Sugars 0.5g	
Includes 0g Added Sugars	0%
Protein 3g	

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

For this example, the pasta:

- Contains whole-wheat flour, enriched flour, and no non-creditable grains.
- Cooks to a ½ cup volume per 32 g dry weight portion, according to the label.
- Contains 29 g of creditable grain per 32 g portion, according to the manufacturer's Product Formulation Statement.

Let's try the 3 calculation methods to determine creditable ounce equivalent (oz eq) grains:

- 1. To determine oz eq by the cooked volume:**

$$\frac{1}{2} \text{ cup cooked pasta} \div \frac{1}{2} \text{ cup standard} = 1 \text{ oz eq}$$

- 2. To determine oz eq by dry weight of pasta:**

$$32 \text{ g dry weight} \div 28 \text{ g standard} = 1.14$$

1.14 rounds down to 1 oz eq

- 3. To determine oz eq by g of creditable grain:**

$$29 \text{ g of creditable grains per portion} \div 28 \text{ g standard} = 1.03$$

1.03 rounds down to 1 oz eq

In this example, the 3 calculation methods result in the same credit amounts. Please note that each of the methods could result in a different answer and, as long as the method was used correctly, the calculated ounce equivalent for any method may be used. Choose and document the method that works best for your program.



CREDITING IN ACTION: DETERMINING MEAL PATTERN CONTRIBUTIONS

Next we will take a look at the steps to calculate the ounce equivalent grains contribution in a recipe.

Example: Calculating the Ounce Equivalent Grains Credit From a Recipe

Use the steps in the Italian Bread recipe example to calculate the ounce equivalent grains in a recipe. Please note that this recipe contains both whole-grain and enriched flours and meals.

Please also note that in determining the grains contribution, decimals are always rounded down so there will never be less credit than what is claimed. However, in determining amounts to prepare, decimals are always rounded up to ensure enough food is prepared to provide the correct number of servings.

Italian Bread—Makes 25 slices

Ingredients	Weight	Measure
Active Dry Yeast		2 Tbsp 1 Tsp
Water (110 °F)		½ cup
Whole-Wheat Flour	1 lb	3½ cups
Enriched Bread Flour	14 oz	3 ⅛ cups
Instant Nonfat Dry Milk	1½ oz	3 Tbsp
Sugar		2 Tbsp
Salt		1¼ Tsp
Water (70-75 °F)		1½ cups
Shortening, trans fat-free		2 Tbsp
White Whole-Grain Cornmeal		1 Tbsp

The creditable grain ingredients are in bold.

Step 1: Convert grain ingredients to ounces in decimals:

Whole-Wheat Flour 1 lb = 16 oz

Enriched Bread Flour 14 oz

White whole-grain cornmeal (because 1 tablespoon of cornmeal weighs less than 1 ounce, the weight is not added to the weight of the other flours).

Note: To convert the weight in pounds to ounces, change weight to pounds in decimals and then multiply by 16 ounces per pound. For example, 1 lb 4 oz = 1.25 lb x 16 oz per pound = 20 oz

CREDITING IN ACTION: DETERMINING MEAL PATTERN CONTRIBUTIONS

Step 2: Convert ounces to grams in decimals:

Whole-Wheat Flour 16 oz x
28.35 g per ounce = 453.6 g

Enriched Bread Flour 14 oz x
28.35 g per ounce = 396.9 g

Step 3: Add the total grams of all grains:

453.6 g Whole-Wheat Flour +
396.9 g Enriched Bread Flour =
850.5 total g

Step 4: Divide the total grams by the number of servings in the recipe:

850.5 total g ÷ 25 = 34.02 g
grains per serving

Step 5: Divide the total grams of grains per serving by 16 g per oz eq:

34.02 g of grains per serving ÷
16 g per oz eq = 2.1262 oz eq
grains.

Step 6: Round down to the nearest 0.25 oz eq:

2.1262 rounds down to 2 oz eq
grains per serving.

1 slice of this Italian bread provides 2 oz eq grains. To provide a 1 oz eq of grains, you could serve a ½ slice of this Italian Bread.

Key Tip: Document both the serving size and the ounce equivalents grains per serving.

WEIGHTS OF COMMONLY USED GRAINS

If your recipe only provides the quantity of grains in cup measurements, use the table below to determine the weight of each ingredient in grams. This saves you the additional step of converting recipes from cups to ounces/pounds and then to grams. Of course, remember to divide or multiply the number of grams to reflect the number of cups in your recipe.

Food Item	Description	Weight of 1 cup in grams
Flour, All-Purpose	Unsifted, spooned	125 grams
Bread Flour	Unsifted, spooned	137 grams
Whole-Wheat Flour	Unsifted, spooned	120 grams
Oats	Uncooked	81 grams
Wheat Germ	Spooned	115 grams

Source: USDA National Nutrient Database for Standard Reference

Note: you may also use the Recipe Analysis Workbook (RAW) available on the *Food Buying Guide* Interactive Web-Based Tool to calculate the meal pattern contribution of your recipes. The online tool contains a user guide and training videos to assist you in using the RAW (see the Resource Section on page 133).



CREDITING IN ACTION: DETERMINING MEAL PATTERN CONTRIBUTIONS

SPECIAL CREDITING SITUATIONS FOR GRAINS

Please note, when crediting combination foods that contain a grain product listed in Exhibit A, such as a wonton or egg roll skins (Exhibit A, Group B) or the crust portion of savory pies (Exhibit A, Group C), the weights of the products vary widely with differences in the amount of fillings so that standard total weights cannot be established. As with all grain items, it is **ONLY** the weight of the grain product **NOT** the weight of the entire food product that is used to determine the grain credit. Document the grains meal pattern contribution (crediting) of these combination foods with a standardized recipe, a Product Formulation Statement, or a CN label. Maintain a copy of the documentation on file to demonstrate how the food contributes toward meal pattern requirements.

The weights listed for a 1 ounce equivalent in each group of Exhibit A reflect the total weight of the product needed to provide at least 16 grams of creditable grains (whole-grain and/or enriched meal and/or flour, bran, or germ) along with any other ingredients in the product.

One ounce equivalent for some foods may be less than a measured ounce if the food is concentrated or low in water content (e.g., flour) or more than an ounce if the food contains a large amount of water (e.g., cooked rice or cooked pasta).

Corn grain products must be labeled as whole corn (or other “whole-corn” designations such as whole-grain corn, whole ground corn, or whole-corn flour) or enriched corn (or other “enriched corn” designations such as enriched yellow cornmeal, enriched corn flour, or enriched corn grits) to be creditable with the exception of corn masa, masa harina, or hominy grits, which are considered whole grain.