

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

School Year 2024-25 (July 1, 2024, through June 30, 2025)

This guidance applies to the meal pattern for grades K-12 in the U.S. Department of Agriculture’s (USDA) Afterschool Snack Program (ASP) of the National School Lunch Program (NSLP) through June 30, 2025. For additional guidance on the ASP meal pattern and crediting requirements for the grains/breads component, visit the [“Meal Patterns for the ASP”](#) and [“Grains/Breads Component”](#) sections of the Connecticut State Department of Education’s (CSDE) Afterschool Snack Program webpage.



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Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Overview of Crediting Requirements for Grains

To credit as the grains/breads component in the ASP meal pattern for grades K-12, commercial grain products and foods made from scratch must be made with creditable grains. Creditable grains include whole grains, enriched grains, bran (such as oat bran, wheat bran, corn bran, rice bran, and rye bran), and germ (such as wheat germ).

Creditable foods for the ASP meal pattern include commercial grain products and foods made from scratch that are whole-grain rich (WGR) or enriched. WGR foods include 100 percent whole grains and foods that contain at least 50 percent whole grain. Creditable cooked and ready-to-eat (RTE) breakfast cereals include products that are WGR, enriched, or fortified.



For guidance on identifying creditable grains, refer to the CSDE's resources, [Crediting Whole Grains in the School Nutrition Programs](#), [Crediting Enriched Grains in the School Nutrition Programs](#), and [Crediting Breakfast Cereals in the Meal Patterns for Grades K-12 in the School Nutrition Programs](#). Additional guidance on the grains/breads component is available in the "Grains/Breads Component" section of the CSDE's Afterschool Snack Program webpage.

Effective July 1, 2025, the USDA final rule, [Child Nutrition Programs: Meal Patterns Consistent with the 2020-2025 Dietary Guidelines for Americans](#), aligns the ASP meal pattern for grades K-12 with the CACFP snack meal pattern requirements and implements the following: 1) the grains/breads component changes to the grains component and the required quantities change from servings to ounce equivalents (oz eq); 2) the NSLP and SBP weekly WGR requirement applies, i.e., at least 80 percent of the weekly grains offered at snack must be WGR, based on oz eq of offered grains; and 3) breakfast cereals cannot exceed 6 grams of added sugars per dry ounce.



Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Overview of Grains/Breads Servings

The required quantities for the grains/breads component are in servings. The minimum creditable amount is $\frac{1}{4}$ serving.

The USDA allows two methods for determining the grains/breads servings of creditable grain products and standardized recipes. Method 1 (weight or volume) is used for commercial grain products and may also be used for standardized recipes that indicate the weight of the prepared (cooked) serving. Method 2 (creditable grains) is used for standardized recipes and may also be used for commercial grain products that have a product formulation statement (PFS) indicating the weight of creditable grains per serving.

School food authorities (SFAs) may use either method but must document how the crediting information is determined for each grain product and recipe (refer to “[Choosing a Calculation Method](#)” in this document). For some commercial products, method 2 is required (refer to “[When Method 2 is Required for Commercial Products](#)” in this document).

SFAs are not required to use these methods if the grain is part of a commercial product with a Child Nutrition (CN) label. CN-labeled products credit toward the grains/bread component based on the stated crediting information for grain ounce equivalents. Grain ounce equivalents are slightly more than grains/breads servings.

CN labels are available only for main dish entrees that contain at least $\frac{1}{2}$ ounce equivalent (oz eq) of the meats/meat alternates component. Some examples include pizza, breaded chicken nuggets, and cheese ravioli. CN-labeled foods also typically indicate the contribution of grains, vegetables, and fruits that are part of these products. **Note:** The ASP meal pattern for grades K-12 indicates the quantities for the MMA component in ounces instead of oz eq. The amount that credits as 1 oz eq or 1 ounce of MMA is the same.

Effective July 1, 2025, the USDA final rule, [Child Nutrition Programs: Meal Patterns Consistent with the 2020-2025 Dietary Guidelines for Americans](#), aligns the ASP meal pattern for grades K-12 with the Child and Adult Care Food Program (CACFP) snack meal pattern. The serving size for MMA will change from ounces to oz eq.

For more information on CN labels, refer to the CSDE’s resource, [Using Child Nutrition \(CN\) Labels in the School Nutrition Programs](#), and Module 6: Meal Pattern Documentation of the

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CSDE's training program, [What's in a Meal: National School Lunch Program and School Breakfast Program Meal Patterns for Grades K-12](#).

Before determining the grains breads/servings, make sure the recipe or commercial grain product is creditable (WGR or enriched).

Method 1: Weights or Volumes (USDA's Exhibit A Chart)

Method 1 uses the USDA's chart, [Exhibit A: Grain Requirements for Child Nutrition Programs](#), to determine the required weight (groups A-G) or volume (groups H-I) for the grain group where the product or recipe belongs. This method is used for commercial grain products and may also be used for recipes if the menu planner knows the weight (grams or ounces) of the prepared (cooked) serving. Some commercial grain products require method 2 and the SFSP sponsor must obtain a PFS (refer to "[When Method 2 is Required for Commercial Products](#)" in this document).

The required quantities for the grains component listed in Exhibit A are not the same for all Child Nutrition Programs because the meal patterns are different. The CSDE's resource, [Servings for Grains/Breads in the Afterschool Snack Program Meal Pattern for Grades K-12](#), lists the Exhibit A servings that apply to the ASP meal pattern for grades K-12.

The amount of a creditable grain food that provides 1 serving of the grains/breads component varies because different types of foods contain different amounts of creditable grains. For example, to credit as 1 serving of the grains/breads component, a roll (group B) must weigh 25 grams or 0.9 ounce, a corn muffin (group C) must weigh 31 grams or 1.1 ounces, and a blueberry muffin (Group D) must weigh 50 grams or 1.8 ounces.

- **Groups A-E (baked goods)** include foods like crackers, breads, rolls, taco shells, muffins, waffles, pancakes, and grain-based desserts, e.g., cookies, cake, granola bars, and pastries. The amount that provides one serving of the grains/breads component ranges from 20 grams or 0.7 ounce for foods in group A to 115 grams or 4 ounces for foods in group G.

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- **Group H (cereal grains)** includes foods like pasta, cooked breakfast cereals, and other cereal grains, e.g., amaranth, barley, buckwheat, cornmeal, corn grits, farina, kasha, millet, oats, quinoa, wheat berries, and rolled wheat. These foods require $\frac{1}{2}$ cup cooked or 25 grams dry to credit as one serving of the grains/breads component. **Note:** Cereal grains typically credit based on the cooked serving, but menu planners may choose to credit cereal grains using the dry uncooked weight. Dry cereal grains used as an ingredient in a standardized recipe (such as rolled oats in bread) require 14.75 grams of creditable grains to credit as 1 serving of the grains/breads component. For guidance on crediting cooked breakfast cereals, refer to the CSDE's resource, [Crediting Breakfast Cereals in the Meal Patterns for Grades K-12 in the School Nutrition Programs](#).
- **Group I (RTE breakfast cereals)** includes cold breakfast cereals such as puffed cereals, round or flaked cereals, and granola. These foods require $\frac{3}{4}$ cup or 1 ounce (28 grams), whichever is less, to credit as 1 serving of the grains/breads component. For guidance on crediting RTE breakfast cereals, refer to the CSDE's resource, [Crediting Breakfast Cereals in the Meal Patterns for Grades K-12 in the School Nutrition Programs](#).

Using Method 1 for commercial products

The product's Nutrition Facts label or PFS must indicate the weight (ounces or grams) of the manufacturer's serving. The tools below help menu planners determine the grains/breads servings contribution of creditable commercial grain products.

- **USDA's Exhibit A Grains Tool:** This [online tool](#) of the USDA's [Food Buying Guide for Child Nutrition Programs](#) (FBG) determines the grains/breads servings of commercial grain products. For more information, refer to the USDA's webinars, [Exhibit A Grains Tool to the Rescue](#) and [How to Maximize the Exhibit A Grains Tool](#).
- **How to Use the Grains/Breads Servings Chart for the ASP:** The CSDE's resource, [How to Use the Grains/Breads Servings Chart for the Afterschool Snack Program Meal Pattern for Grades K-12](#), reviews the steps for using the Exhibit A quantities to determine the grains/breads servings of three types of commercial products and standardized recipes. These include grain menu items in groups A-G that contain multiple small pieces per serving (e.g., crackers, hard pretzels, and animal crackers), multiple large pieces per serving (e.g., pancakes, slices of bread, and waffles), and one piece per serving (e.g., muffins, bagels, and rolls).

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Using method 1 for foods made from scratch

SFAs must have a standardized recipe on file that indicates the weight of the prepared (cooked) serving. If the recipe does not provide this information, SFAs could determine the average weight per serving by weighing several servings of the recipe. For more information, refer to the CSDE's [Yield Study Data Form for Child Nutrition Programs](#).

Method 2: Creditable Grains

Method 2 determines the grains/breads servings for creditable grain products and recipes by calculating the total weight (grams) of creditable grains per serving. The grams of creditable grains are obtained from the commercial product's PFS or calculated from the grain quantities in the SFSP sponsor's recipe. To credit as 1 serving of the grains/breads component:

- foods in groups A-G must contain 14.75 grams of creditable grains; and
- foods in groups H-I must contain 25 grams of creditable grains.

There are some situations when SFAs must use method 2 to determine if a commercial product meets the crediting criteria for grain menu items. Refer to "[When Method 2 is Required for Commercial Products](#)" in this document.

Using method 2 for commercial products

SFAs must obtain a PFS from the manufacturer that documents the weight of the creditable grains per serving. For information on PFS forms, refer to the CSDE's resources, [Using Product Formulation Statements in the School Nutrition Programs](#) and [Accepting Processed Product Documentation in the School Nutrition Programs](#); and the USDA's handouts, [Product Formulation Statement for Documenting Grains/Breads Servings in the Child and Adult Care Food Program, Summer Food Service Program, and NSLP Afterschool Snacks](#) and [Tips for Evaluating a Manufacturer's Product Formulation Statement](#). Additional guidance on documentation for commercial products is available in the "Crediting Commercial Processed Products in School Nutrition Programs" section of the CSDE's [Crediting Foods in School Nutrition Programs](#) webpage.

For guidance on evaluating a grain product's PFS, refer to the CSDE's resource, [When Commercial Grain Products Require a Product Formulation Statement to Credit in the School Nutrition Programs](#). Training on the PFS requirements and how to evaluate a PFS is available in Module 6: Meal Pattern Documentation of the CSDE's training program, [What's in a Meal: National School Lunch Program and School Breakfast Program Meal Patterns for Grades K-12](#).

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Using method 2 for foods made from scratch

SFAs must have a standardized recipe on file that indicates the weight of each grain ingredient. The grams of creditable grains per serving are determined from the weight of each grain ingredient listed in the standardized recipe.

If the recipe lists grain ingredients by volume (e.g., cups and quarts) instead of weight (pound and ounces), each measurement must be converted to grams (refer to “[Method 2 calculation for recipes listing the volume of grain ingredients](#)” in this document).

For assistance with recipe calculations, such as converting fractions to decimals, refer to the Institute of Child Nutrition’s (ICN) [Basics at a Glance Portion Control Poster](#) and the decimal equivalents of fractions in the “[Introduction](#)” section of the USDA’s FBG.

Menu planners may use the FBG’s online [Recipe Analysis Workbook](#) to search for ingredients, develop a standardized recipe, and determine the recipe’s meal pattern contribution per serving. To access this tool, users must create a free account on the USDA’s FBG website. For additional guidance on determining the grain servings of recipes, visit the “[Crediting Foods Made from Scratch](#)” section of the CSDE’s Crediting Foods in School Nutrition Programs webpage.



Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

When Method 2 is Required for Commercial Products

SFAs must use method 2 and obtain a PFS from the manufacturer if the ingredients statement and packaging do not provide sufficient information to determine if the product meets the crediting requirements for the ASP meal pattern for grades K-12. A PFS is required for commercial products when any of the situations below apply.

Note: When reviewing the first ingredient on the product's label, water is ignored. For combination foods, these requirements apply only to the grain portion.

1. The first ingredient is not a creditable grain, but the product contains more than one creditable grain. The PFS must indicate that the combined weight of all creditable grains is the greatest ingredient by weight.
2. A commercial combination food that contains a grain portion (such as pizza or breaded chicken nuggets) does not have a CN label. The PFS must indicate the following: 1) the weight (grams) of each creditable grain per serving; 2) how the product provides that amount according to the USDA's [Food Buying Guide for Child Nutrition Programs](#) (FBG) or USDA's regulations, guidance, or policies; and 3) if applicable, the total weight of any noncreditable grains.
3. The manufacturer claims that the product's serving size is less than the required weight or volume in the USDA's [Exhibit A: Grain Requirements for Child Nutrition Programs](#) (Exhibit A chart). The PFS must indicate the following: 1) the weight (grams) of each creditable grain per serving; 2) how the product provides that amount according to the FBG or USDA's regulations, guidance, or policies; and 3) if applicable, the total weight of noncreditable grains.
4. The product is not listed in the Exhibit A chart. The PFS must indicate the following: 1) the weight (grams) of each creditable grain per serving; 2) how the product provides that amount according to the FBG or USDA's regulations, guidance, or policies; and 3) if applicable, the total weight of noncreditable grains.

If the manufacturer will not supply a PFS or the PFS does not provide the appropriate documentation, the product cannot credit as the grains/breads component in ASP snacks.

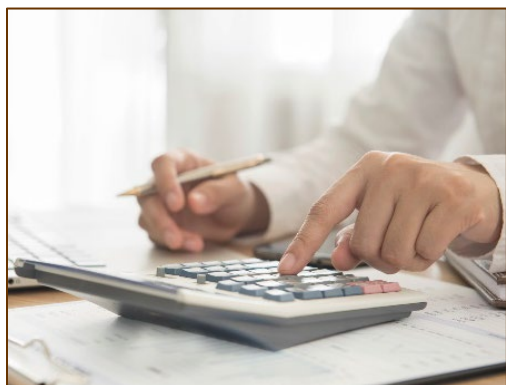
Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

SFAs must verify the accuracy of the PFS before including the commercial grain product in reimbursable meals and ASP snacks. For specific guidance and examples of each situation that requires a PFS and an example of how to evaluate a grain PFS, refer to the CSDE's resource, [When Commercial Grain Products Require a Product Formulation Statement to Credit in the School Nutrition Programs](#).

Crediting documentation must be maintained on file. The CSDE will review this information during the Administrative Review of the school nutrition programs.

Choosing a Calculation Method

SFAs may choose to use either method to determine the grains/breads servings contribution of a grain menu item but must document which method is used for each grain menu item. For some commercial grain products, each method results in a different crediting contribution. For example, a 1-ounce whole-grain bagel might credit as 1 serving of the grains/breads component using method 1 (USDA's Exhibit A chart) and 1½ servings using method 2 (creditable grains).



SFAs should use the same calculation method each time the same product is on the menu. For example, if the menu planner uses method 2 (creditable grains) to determine the crediting of a whole-grain bagel, that same bagel should always be credited using method 2. The CSDE strongly recommends choosing one calculation method for consistent crediting. This simplifies menu planning and assists SFAs with documenting compliance for the grains/breads component.

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Sample Calculations for Commercial Products in Group A-E

This section demonstrates how to calculate the grains/breads servings of commercial grain products using the appropriate weight for groups A-E in the USDA's Exhibit A chart (method 1) or the weight of creditable grains per serving (method 2). SFAs may also use the USDA's [Exhibit A Grains Tool](#) to calculate this information automatically (refer to "Using Method 1 for commercial products" in this document).

Example 1 shows how to use method 1 to calculate the grains/breads servings of commercial grain products in groups A-E. To credit a commercial product using method 1, SFAs must know the weight of the serving. This example is for whole-wheat pancakes, a commercial product in group C.



Example 2 shows a sample calculation for this same product using method 2. To credit a commercial product using method 2, SFAs must obtain a manufacturer's PFS stating the total weight (grams) of all creditable grains in the serving.

These examples show how each method can result in a different crediting contribution for the same product. For some products, each method results in the same crediting contribution. SFAs may use either method but must document how the crediting information was determined (refer to "[Choosing a Calculation Method](#)" in this document).

To determine the grains/breads servings of a commercial grain product using method 1, menu planners must use the weight (ounces or grams) of one serving from the product's Nutrition Facts label or PFS. If the product lists the serving size in ounces and grams, menu planners may choose to use either one. To convert ounces to grams, multiply ounces by 28.35.

For additional guidance on determining the grains/breads servings of a grain menu item in groups A-G, refer to the CSDE's resource, [How to Use the Grains/Breads Servings Chart for the Afterschool Snack Program Meal Pattern for Grades K-12](#).

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Example 1: Using method 1 for commercial grain products in groups A-E

Whole-wheat Mini Pancakes

Manufacturer's serving size:

5 pancakes (1.75 ounces)

Group C (USDA's Exhibit A chart)

1 serving = 31 grams or 1.1 ounces

Ingredients: Water, whole-wheat flour, enriched flour (wheat flour, niacin, ferrous sulfate, thiamin mononitrate, riboflavin, folic acid), sugar, canola oil. Contains 2% or less of: leavening (baking soda, sodium aluminum phosphate, monocalcium phosphate), eggs, salt, buttermilk.

Steps to determine grains/breads servings using method 1

1. **List the weight of the manufacturer's serving:** Refer to the product's Nutrition Facts label or PFS (1 ounce = 28.35 grams).

1.75 ounces

2. **List the required weight for 1 grains/breads serving of the applicable grain group in the USDA's Exhibit A chart:** Refer to the CSDE's resource, [Servings for Grains/Breads in the Afterschool Snack Program Meal Pattern for Grades K-12](#). Pasta is in group H.

1.1 ounces

3. **Determine the grains/breads servings in one serving of the product:** Divide the weight of the manufacturer's serving (step 1) by the required weight for 1 grains/breads serving (step 2).

1 ounce divided by 1.1 ounces = 1.59 grains/breads servings per manufacturer's serving (5 mini pancakes)

4. **Meal pattern contribution (grains/breads servings):** Round down the grains/breads servings in step 3 to the nearest $\frac{1}{4}$ grains/breads serving. For example, 1.49 and 1.27 round down to 1.25 and 1.24 rounds down to 1.

1.59 grains/breads servings rounds down to 1.5 grains/breads servings per manufacturer's serving (5 mini pancakes)

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Example 2: Using method 2 for commercial grain products in groups A-E

Whole-wheat Pancakes

Manufacturer's serving size:

5 pancakes (1.75 ounces)

Creditable grains per serving (from product's PFS)

Whole-wheat flour: 16 grams

Enriched flour: 14 grams

Ingredients: Water, whole-wheat flour, enriched flour (wheat flour, niacin, ferrous sulfate, thiamin mononitrate, riboflavin, folic acid), sugar, canola oil. Contains 2% or less of: leavening (baking soda, sodium aluminum phosphate, monocalcium phosphate), eggs, salt, buttermilk.

Steps to determine grains/breads servings using method 2

1. **List the total weight (grams) of all creditable grains (whole, enriched, bran, and germ) in one serving:** Refer to the product's PFS.

16 grams whole wheat flour plus 14 grams enriched flour = 30 grams of creditable grains

2. **Determine the grains/breads servings in one serving of the product:** For group C, 14.75 grams of creditable grains equal 1 grains/breads serving. Divide the total weight (grams) of all creditable grains (step 1) by 14.75.

30 grams divided by 14.75 = 2.03 grains/breads servings per manufacturer's serving (5 mini pancakes)

3. **Meal pattern contribution (grains/breads servings):** Round down the grains/breads servings in step 3 to the nearest $\frac{1}{4}$ grains/breads serving. For example, 1.49 and 1.27 round down to 1.25 and 1.24 rounds down to 1.

2.03 grains/breads servings rounds down to 2.0 grains/breads servings per manufacturer's serving (5 mini pancakes)

Calculation Methods for Grain Ounce Equivalents for the NSLP and SBP Meal Patterns for Grades K-12

Sample Calculations for Commercial Products in Group H

This section demonstrates how to calculate the grains/breads servings of commercial grain products using the appropriate weight or volume for groups H in the USDA's Exhibit A chart (method 1) or the weight of creditable grains per serving (method 2). SFAs may also use the USDA's [Exhibit A Grains Tool](#) to calculate this information automatically (refer to "[Using Method 1 for commercial products](#)" in this document).

Example 3 shows how to use method 1 to calculate the grains/breads serving for a commercial whole-grain pasta product in group H. To credit a commercial product using method 1, SFAs must know the weight of the dry serving or the volume of the cooked serving.

Example 4 shows a sample calculation for this same product using method 2. To credit a commercial product using method 2, SFAs must obtain a manufacturer's PFS stating the total weight (grams) of all creditable grains in the serving.

These examples show how each method can result in the same crediting contribution for a commercial grain product. For some products, each method results in a different crediting contribution. SFAs may use either method but must document how the crediting information was determined (refer to "[Choosing a Calculation Method](#)" in this document).

Cereal grains in group H typically credit based on the **cooked** serving, i.e., $\frac{1}{2}$ cup of cooked cereal credits as 1 serving of the grains/breads component. However, menu planners may choose to calculate the product's grains/breads servings based on the **dry uncooked weight**, i.e., 25 grams of dry cereal grains credit as 1 serving of the grains/breads component. The weight (ounces or grams) of the grain menu item's serving size must be determined from the commercial product's Nutrition Facts label or the manufacturer's PFS. If the product lists the serving size in ounces and grams, the menu planner may choose to use either one.



Calculation Methods for Grain Ounce Equivalents for the NSLP and SBP Meal Patterns for Grades K-12

Example 3: Using method 1 for commercial grain products in group H

Whole-grain Pasta

Manufacturer's serving size:
32 grams dry (½ cup cooked)

Ingredients: Whole-grain durum wheat flour, enriched wheat flour.

Group H (USDA's Exhibit A chart)

1 serving = ½ cup cooked or 25 grams dry

Steps to determine grains/breads servings using method 1

1. **List the weight of the manufacturer's serving from the product's Nutrition Facts label or PFS:** To convert ounces to gram or grams to ounces, use the conversion factor of 1 ounce equals 28.35 grams.

32 grams

2. **List the required weight for 1 grains/breads serving of the applicable grain group in the USDA's Exhibit A chart:** Refer to the CSDE's resource, [Servings for Grains/Breads in the Afterschool Snack Program Meal Pattern for Grades K-12](#). Pasta is in group H.

25 grams

3. **Determine the grains/breads servings in one serving of the product:** Divide the weight of the manufacturer's serving (step 1) by the required weight for 1 grains/breads serving (step 2).

32 grams divided by 25 = 1.28 grains/breads servings per manufacturer's serving (½ cup cooked pasta)

4. **Meal pattern contribution (grains/breads servings):** Round down the grains/breads servings in step 3 to the nearest ¼ grains/breads serving. For example, 1.49 and 1.27 round down to 1.25 and 1.24 rounds down to 1.

1.28 grains/breads servings rounds down to 1.25 grains/breads servings per manufacturer's serving (½ cup cooked pasta)

Calculation Methods for Grain Ounce Equivalents for the NSLP and SBP Meal Patterns for Grades K-12

Example 4: Using method 2 for commercial grain products in group H

Whole-grain Pasta

Manufacturer's serving size:
32 grams dry (½ cup cooked)

Creditable grains per serving (from product's PFS)

Whole-wheat flour: 15 grams

Enriched flour: 14 grams

Ingredients: Water, whole-wheat flour, enriched flour (wheat flour, niacin, ferrous sulfate, thiamin mononitrate, riboflavin, folic acid), sugar, canola oil. Contains 2% or less of: leavening (baking soda, sodium aluminum phosphate, monocalcium phosphate), eggs, salt, buttermilk.

Steps to determine grains/breads servings using method 2

1. **List the total weight (grams) of all creditable grains (whole, enriched, bran, and germ) in one serving:** Refer to the product's PFS.

15 grams whole wheat flour plus 14 grams enriched flour = 29 grams of creditable grains

2. **Determine the grains/breads servings in one serving of the product:** For group H, 25 grams of creditable grains equal 1 grains/breads serving. Divide the total weight (grams) of all creditable grains (from step 1) by 25.

29 grams divided by 25 = 1.16 grains/breads servings per manufacturer's serving (½ cup cooked pasta)

3. **Meal pattern contribution (grains/breads servings):** Round down the grains/breads servings in step 3 to the nearest ¼ grains/breads serving. For example, 1.49 and 1.27 round down to 1.25 and 1.24 rounds down to 1.

1.16 grains/breads servings rounds down to 1.0 grains/breads serving per manufacturer's serving (½ cup cooked pasta)

Calculation Methods for Grain Ounce Equivalents for the NSLP and SBP Meal Patterns for Grades K-12

Sample Calculations for Foods Made from Scratch

SFAs must have recipes on file to document the meal pattern contribution of grain foods made from scratch, such as breads, rolls, muffins, pizza dough, and pancakes. This section demonstrates how to calculate the grains/breads servings of standardized recipes using either the appropriate weight (groups A-G) or volume (groups H-I) in the USDA's Exhibit A chart (method 1) or the weight of creditable grains per serving (method 2). SFAs may also use the USDA's [Recipe Analysis Workbook](#) to automatically calculate this information (refer to "Using method 2 for foods made from scratch" in this document).

Method 1 cannot be used for foods made from scratch in groups A-E unless the SFA knows the serving weight. If the recipe does not provide this information, SFAs could determine the average serving weight by weighing several portions (refer to the CSDE's [Yield Study Data Form for Child Nutrition Programs](#)). If the serving weight cannot be determined, the creditable grains method must be used to determine the standardized recipe's grains/breads servings.

SFAs do not need to calculate grains/breads servings for foods prepared from the USDA's recipes for Child Nutrition Programs. These standardized recipes specify the meal pattern crediting information per serving. For links to the USDA's recipes, visit the Institute of Child Nutrition's (ICN) [Child Nutrition Recipe Box](#) and the "Recipes" section of the CSDE's [Menu Planning for Child Nutrition Programs](#) webpage. For information on standardized recipes, visit the "[Crediting Foods Made from Scratch](#)" section of the CSDE's Crediting Foods in School Nutrition Programs webpage.

Method 2 calculation for recipes listing the weight of grain ingredients

Example 5 shows how to use method 2 to calculate the grains/breads servings for a standardized multi-grain bread recipe that lists the weight of the grain ingredients. Bread is in group B of the USDA's Exhibit A chart and requires 14.75 grams of creditable grains to credit as 1 serving of the grains/breads component.

Note: Dry cereal grains used as an ingredient in a standardized recipe (such as rolled oats and cornmeal) credit the same as groups A-E; 14.75 grams credit as 1 serving of the grains/breads component.



Calculation Methods for Grain Ounce Equivalents for the NSLP and SBP Meal Patterns for Grades K-12

Example 5: Using method 2 for recipes listing the weight of grain ingredients

Multi-grain bread recipe

Yield: 100 servings

Serving size: 1 piece

Grain ingredients:

Whole-wheat flour: 8 ounces (0.5 pound)

Rolled oats: 1 pound 2 ounces (1.125 pounds)

Enriched flour: 1 pound

Enriched cornmeal: 8 ounces (0.5 pound)

Steps to determine grains/breads servings using method 2

1. **Determine the total weight (pounds) of all creditable grains in the recipe:** Convert ounces to pounds (16 ounces = 1 pound). Convert fractions to decimals, e.g., $1\frac{3}{4}$ pounds = 1.75 pounds.

Whole grains: 0.5 pound whole-wheat flour plus 1.125 pounds rolled oats = 1.625 pounds

Enriched grains: 1 pound enriched flour plus 0.5 pound enriched cornmeal = 1.5 pounds

Total creditable grains = 3.125 pounds

2. **Determine the total grams of creditable grains in the recipe (1 pound = 453.6 grams):** Multiply the total pounds of creditable grains (step 1) by 453.6.

3.125 pounds multiplied by 453.6 = 1417.5 grams

3. **List the number of servings in the recipe (yield):** 100 servings

4. **Determine the grams of creditable grains per recipe serving:** Divide the total grams of creditable grains (step 2) by the number of servings (step 3).

1417.5 grams divided by 100 servings = 14.174 grams per recipe serving (1 piece)

5. **Determine grains/breads servings per recipe serving:** For creditable grains in recipes, 14.75 grams equal 1 grains/breads serving. Divide the grams of creditable grains per serving (step 4) by 14.75.

14.174 grams divided by 14.75 = 0.96 grains/breads serving per recipe serving (1 piece)

6. **Meal pattern contribution (grains/breads servings):** Round down the grains/breads servings in step 3 to the nearest $\frac{1}{4}$ grains/breads serving. For example, 1.49 and 1.27 round down to 1.25 and 1.24 rounds down to 1.

0.96 grains/breads serving rounds down to 0.75 grains/breads serving per recipe serving (1 piece)

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Method 2 calculation for recipes listing the volume of grain ingredients

Standardized recipes list ingredients by volume (e.g., cups and quarts) and weight (e.g., pounds and ounces). Weight is the most accurate measure. Recipes that are not standardized (such as recipes used at home) typically list only the volume (e.g., cups and quarts) of grain ingredients. SFAs may use any of the methods below to convert the volume of the grain ingredients to weight (grams).

1. **Nutrition Facts label:** Use the manufacturer's serving size information on the Nutrition Facts label for the grain ingredient, e.g., whole-wheat flour, enriched flour, or whole-grain cornmeal. Multiply the grams per cup (indicated on the Nutrition Facts label) by the number of cups used in the recipe. The example below shows how to use the Nutrition Facts label to determine the weight of the grain ingredients in a standardized recipe that contains 2 cups of whole-wheat flour and 2 cups of enriched flour.



- o **Whole wheat flour:** The Nutrition Facts label for the whole-wheat flour states that $\frac{1}{4}$ cup weighs 32 grams, which equals 128 grams per cup. Multiply the grams per cup (128 grams) by the number of cups used in the recipe (2 cups) to determine the total weight of the grain ingredient in the recipe (256 grams).
 - o **Enriched flour:** The Nutrition Facts label for the enriched flour states that $\frac{1}{4}$ cup weighs 30 grams, which equals 120 grams per cup. Multiply the weight per cup (120 grams) by the amount of enriched flour used in the recipe (2 cups) to determine the weight of the enriched flour used in the recipe (240 grams).
2. **Nutrient database:** Search the USDA's [FoodData Central](#) nutrient database for grain ingredients, such as whole-wheat flour or yellow cornmeal. Enter "1" in the data field for the cup measurement, and the database will provide the weight of 1 cup of that ingredient.
3. **Volume equivalent chart:** Use volume equivalent charts that list the weight of 1 cup of grain ingredients. Table 6 shows the weight per cup for some commonly used grain ingredients.
4. **Yield study:** Determine the average weight of 1 cup of the grain ingredient by measuring and weighing several samples. For more information, refer to the CSDE's [Yield Study Form for Child Nutrition Programs](#).

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Example 6 shows how to use method 2 to calculate the grains/breads servings for a recipe that lists the grain ingredients in cups, using the weights from the table below.

Table 1. Weights of 1 cup of commonly used grain ingredients ¹

Food item	Weight (grams) per cup
Barley, flour or meal ²	148
Barley, hulled ²	184
Barley, pearled, uncooked ²	200
Barley, pearled, cooked ²	157
Breadcrumbs, dry, grated, plain ²	108
Breadcrumbs, plain, dry, grated, seasoned ²	120
Breadcrumbs, plain soft, white ²	45
Bulgur, uncooked ²	140
Bulgur, cooked ²	182
Cereal, General Mills Cheerios ³	28
Cereal, General Mills Corn Chex ³	31
Cereal, General Mills Rice Chex ³	27
Cereal, General Mills Wheat Chex ³	47
Cereal, General Mills Wheaties ³	36
Cereal, Kellogg's All-Bran Bran Buds ⁴	90
Cereal, Kellogg's All-Bran Original ⁴	62
Cereal, Kellogg's Corn Flakes crumbs ⁴	88
Cereal, Kellogg's Corn Flakes, whole ⁴	28
Cereal, Kellogg's Rice Krispies ⁵	26
Cereal, Quaker Puffed Rice ⁵	14
Cereal, Quaker Puffed Wheat ⁵	28
Cornmeal, enriched, uncooked, yellow, degerminated ²	157
Cornmeal, enriched, uncooked, yellow, whole grain ²	122
Cracker crumbs, graham, crushed ²	84
Cracker crumbs, snack, standard snack-type, regular, crushed ²	52

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Food item	Weight (grams) per cup
Flour, buckwheat, whole groats ²	120
Flour, corn, whole grain, yellow ²	117
Flour, rice, brown ²	158
Flour, rice, white ²	158
Flour, rye, dark ²	128
Flour, rye, light ²	102
Flour, wheat, white, all-purpose enriched, bleached ²	125
Flour, wheat, white, all-purpose enriched, unbleached ²	125
Flour, wheat, white, bread, enriched ²	137
Flour, wheat, white, cake, enriched, unsifted, dipped ²	137
Flour, wheat, white, self-rising, enriched ²	125
Flour, wheat, whole grain ²	120
Wheat germ, uncooked, plain ²	88
Wheat germ, toasted, plain ²	115
Oat bran, raw ²	94
Oat bran, cooked ²	219
Oats, rolled, quick, uncooked ²	81
Oats, rolled, regular, uncooked ²	81

¹ The use of brand-name products is solely for clarification regarding serving sizes and does not constitute approval or endorsement by the USDA or CSDE. The actual weight of 1 cup may be more or less than the weights in this chart, depending on the measuring method used, e.g., stirred or unstirred, sifted or unsifted, spooned or dipped, and coarsely or finely crushed. For the most accurate conversion of volume to weight, calculate the average weight of 1 cup of the ingredient by measuring and weighing several samples. For more information, refer to the CSDE's [Yield Study Data Form for Child Nutrition Programs](#).

² USDA's FoodData Central database (Standard Reference (SR) Legacy Data):
<https://fdc.nal.usda.gov/>

³ General Mills Cereals: <https://www.generalmills.com/food-we-make/brands>

⁴ Kellogg's Cereals: <https://www.wkkellogg.com/en-us/our-foods/our-brands.html>

⁵ Quaker Cereals: <https://www.quakeroats.com/products>

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Example 6: Using method 2 for recipes listing the volume of grain ingredients

Multi-grain bread recipe

Yield: 25 servings

Serving size: 1 piece

Whole-wheat flour, 2 cups

Rolled oats, $\frac{3}{4}$ cup

All-purpose enriched flour, 2 cups

Enriched cornmeal, $\frac{1}{4}$ cup

- Determine the total weight (grams) of all creditable grains in the recipe:** Use any of the following: Nutrition Facts label; nutrient database; volume equivalent chart; or yield study (refer to “[Method 2 calculation for recipes listing the volume of grain ingredients](#)” in this document). Convert fractions to decimals if needed, e.g., $1\frac{3}{4}$ pounds = 1.75 pounds.

The chart below uses [table 1](#) to determine the grams per cup for each ingredient. The recipe contains 581.25 grams of creditable grains.

Grain ingredient	Measure	Grams per cup (table 1)	Weight (grams)
Whole-wheat flour	2 cups	X 120 =	240.00
Rolled oats	$\frac{3}{4}$ cup	X 81 =	60.75
Enriched flour	2 cups	X 125 =	250.00
Enriched cornmeal	$\frac{1}{4}$ cup	X 122 =	30.5
Total weight (grams):			581.25

- List the number of servings in the recipe (yield):**

25 servings

- Determine the grams of creditable grains per serving:** Divide the total grams of creditable grains (from step 1) by the number of servings (from step 2).

581.25 grams divided by 25 servings = 23.25 grams of creditable grains per recipe serving

- Determine the grains/breads servings per manufacturer’s serving:** For creditable grains in recipes, 14.75 grams equal 1 grains/breads serving. Divide the grams of creditable grains per serving (step 3) by 14.75.

23.25 grams divided by 14.75 = 1.58 grains/breads servings per recipe serving (1 piece)

- Meal pattern contribution (grains/breads servings):** Round down the grains/breads servings in step 4 to the nearest $\frac{1}{4}$ grains/breads serving. For example, 1.49 and 1.27 round down to 1.25 and 1.24 rounds down to 1.

1.58 grains/breads servings round down to 1.5 grains/breads servings per recipe serving (1 piece)

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

Resources

Accepting Processed Product Documentation in the School Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/accepting_processed_product_documentation_snp.pdf

Afterschool Snack Program (CSDE webpage):

<https://portal.ct.gov/sde/nutrition/afterschool-snack-program>

Afterschool Snack Program Meal Pattern for Grades K-12 (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/asp/meal_pattern_asp_grades_k-12.pdf

Basics at a Glance Portion Control Poster (Institute of Child Nutrition):

<https://theicn.org/icn-resources-a-z/basics-at-a-glance/>

Comparison of Meal Pattern Requirements for the Grains/Breads component in School Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/comparison_grain_crediting_snp.pdf

Crediting Breakfast Cereals in the Meal Patterns for Grades K-12 in the School Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/credit_cereals_snp_grades_k-12.pdf

Crediting Enriched Grains in the School Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/credit_enriched_grains_snp.pdf

Crediting Whole Grains in the School Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/credit_whole_grains_snp.pdf

Exhibit A: Grain Requirements for Child Nutrition Programs (USDA):

<https://foodbuyingguide.fns.usda.gov/Content/TablesFBG/ExhibitA.pdf>

Food Buying Guide Exhibit A Grains Tool (USDA):

<https://www.fns.usda.gov/tn/food-buying-guide-interactive-web-based-tool>

Food Buying Guide Section 4: Overview of Crediting Requirements for the Grains/breads component (USDA):

https://foodbuyingguide.fns.usda.gov/Content/TablesFBG/USDA_FBG_Section4_Grains.pdf

Food Buying Guide Section 4: Yield Table for Grains (USDA):

https://foodbuyingguide.fns.usda.gov/files/Reports/USDA_FBG_Section4_GrainsYieldTable.pdf

FoodData Central (USDA):

<https://fdc.nal.usda.gov/>

Grains/Breads Component (“Documents/Forms” section of the CSDE’s Afterschool Snack Program (ASP) webpage):

<https://portal.ct.gov/sde/nutrition/afterschool-snack-program/documents#GrainsBreadsK12>

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

How to Use the Grains/Breads Servings Chart for Grades K-12 in the Afterschool Snack Program (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/how_to_use_grains_breads_servings_chart_asp_k-12.pdf

Servings for Grains/Breads in the Afterschool Snack Program Meal Pattern for Grades K-12 (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/asp/grains_breads_servings_asp_grades_k-12.pdf

Standardized Recipes (“CSDE’s Crediting Foods in School Nutrition Programs webpage):

<https://portal.ct.gov/sde/nutrition/crediting-foods-in-school-nutrition-programs#StandardizedRecipes>

Tips for Evaluating a Manufacturer’s Product Formulation Statement (USDA):

<https://fns-prod.azureedge.us/sites/default/files/resource-files/manufacturerPFStipsheet.pdf>

USDA Final Rule: Child Nutrition Programs: Meal Patterns Consistent with The 2020-2025 Dietary Guidelines For Americans (89 FR 31962):

<https://www.federalregister.gov/documents/2024/04/25/2024-08098/child-nutrition-programs-meal-patterns-consistent-with-the-2020-2025-dietary-guidelines-for>

USDA Memo SP 34-2019, CACFP 15-2019, and SFSP 15-2019: Crediting Coconut, Hominy, Corn Masa, and Masa Harina in the Child Nutrition Programs:

<https://www.fns.usda.gov/cn/crediting-coconut-hominy-corn-masa-and-masa-harina-child-nutrition-programs>

Using Child Nutrition (CN) Labels in the School Nutrition Programs (CDSE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/cn_labels_snp.pdf

Using Product Formulation Statements in the School Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/product_formulation_statements.pdf

What’s in a Meal Module 6: Meal Pattern Documentation (CSDE’s Training Program, What’s in a Meal: National School Lunch Program and School Breakfast Program Meal Patterns for Grades K-12):

<https://portal.ct.gov/sde/nutrition/meal-pattern-training-materials>

When Commercial Grain Products Require a Product Formulation Statement to Credit in the School Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/when_commercial_grain_products_require_pfs_snp.pdf

Yield Study Form for Child Nutrition Programs (CSDE):

https://portal.ct.gov/-/media/sde/nutrition/nslp/crediting/yield_study_form.pdf

Calculation Methods for Grains/Breads Servings for the Afterschool Snack Program Meal Pattern for Grades K-12

For more information, visit the “[Grains/Breads Component for Grades K-12 in the ASP](#)” section of the CSDE’s [ASP](#) webpage or contact the [school nutrition programs staff](#) at the Connecticut State Department of Education, Bureau of Child Nutrition Programs, This document is available at https://portal.ct.gov/-/media/sde/nutrition/asp/grains_breads_calculation_asp_grades_k-12.pdf.

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1. mail: U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410; or
2. fax: (833) 256-1665 or (202) 690-7442; or
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