

Calculation Methods for Grain Servings for Preschoolers in the National School Lunch Program, School Breakfast Program, and Afterschool Snack Program

This guidance applies through September 30, 2021, to the meal patterns for preschoolers (ages 1-4) in the U.S. Department of Agriculture’s (USDA) School Breakfast Program (SBP), National School Lunch Program (NSLP), Seamless Summer Option (SSO) of the NSLP, and Afterschool Snack Program (ASP) of the NSLP. Effective October 1, 2021, the required amount for the grains component changes to ounce equivalents. For detailed guidance on the grains component, see the Connecticut State Department of Education’s (CSDE) guide, [Menu Planning Guide for Preschoolers in the NSLP, SBP, and ASP](#).

The preschool meal patterns are the same as the meal patterns for the Child and Adult Care Food Program (CACFP). To credit as the grains component in the preschool meal patterns, grain products and recipes must contain a creditable grain (whole, enriched, bran, or germ) as the greatest ingredient. Cooked and ready-to-eat (RTE) breakfast cereals must contain a creditable grain as the first ingredient or be fortified; and cannot contain more than 6 grams of sugars per dry ounce. At least one serving of grains per day must be WGR. **Note:** Bran and germ credit in the preschool meal patterns for the NSLP, SBP and ASP; and in the ASP meal pattern for grades K-12. However, they do not credit in the NSLP and SBP meal patterns for grades K-12.

For guidance on identifying creditable grains, see the CSDE’s handout, [How to Identify Creditable Grains for Preschoolers in the NSLP, SBP, and ASP](#), [Crediting Whole Grains in the NSLP and SBP](#), [Crediting Enriched Grains in the NSLP and SBP](#), [Crediting Breakfast Cereals for Preschoolers in the NSLP, SBP, and ASP](#), and [Whole Grain-rich Criteria for Preschoolers in the NSLP, SBP, and ASP](#). For a comparison of the grain requirements for preschoolers and grades K-12, see the CSDE’s handout, [Comparison of Meal Pattern Requirements for the Grains Component in School Nutrition Programs](#).



Through September 30, 2021, the required quantities for the grains component of the preschool meal patterns are in servings. School food authorities (SFAs) have two options for calculating the servings for creditable commercial grain products and foods made on site. Method 1 uses the weight (groups A-G) or volume (groups H-I) for the appropriate grain group in the USDA’s grain servings chart. Method 2 calculates the total weight (grams) of creditable grains per serving.



SFAs may use either method, but must document how the crediting information was obtained. For more information, see “Choosing a Calculation Method” on page 11. In some situations, method 2 is required. For more information, see “When Method 2 is Required for Commercial Products” on page 4.

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Note: SFAs are not required to use either method if a product has a Child Nutrition (CN) label. CN-labeled products credit based on the stated crediting information. CN labels are available only for main dish entrees that contribute to the meat/meat alternates component. However, CN-labeled products usually include the crediting information for grains, vegetables, and fruits that are part of the product. For more information, see the CSDE's handout, *Child Nutrition (CN) Labeling Program*. The USDA's [Authorized Labels and Manufacturers](#) webpage lists approved CN-labeled products and manufacturers.

Method 1: Grain Servings Chart (Weights or Volumes)

Method 1 determines the preschool servings for creditable grain products using the weight (groups A-E) or volume (groups H-I) for the appropriate grain group in the USDA's grain servings chart. This chart is summarized in the CSDE's handout, *Grain Servings for Preschoolers in the NSLP, SBP, and ASP*, and groups foods based on the average grain content of similar products. For example, to provide $\frac{1}{2}$ serving (the required preschool amount), a whole-wheat roll (group B) must weigh 13 grams (0.5 ounce) and a blueberry muffin (group D) must weigh 25 grams (0.9 ounce). The minimum creditable amount for all groups is $\frac{1}{4}$ serving. **Note:** Groups F and G do not have minimum amounts because grain-based desserts do not credit in the preschool meal patterns.

- **Groups A-E (baked goods):** Baked goods (such as crackers, animal and graham crackers, breads, rolls, taco shells, muffins, waffles, and pancakes) require 7.38 grams of creditable grains to credit as $\frac{1}{2}$ serving. The amount that provides $\frac{1}{2}$ serving varies from 10 grams (0.4 ounces) for foods in group A to 31 grams (1.1 ounces) for foods in group E.
- **Group H (cereal grains):** Pasta, cooked breakfast cereals, and cereal grains (such as amaranth, barley, buckwheat, cornmeal, corn grits, farina, kasha, millet, oats, quinoa, wheat berries, and rolled wheat) require $\frac{1}{4}$ cup cooked or 13 grams (0.5 ounce) dry to credit as $\frac{1}{2}$ serving. Cereal grains typically credit based on the cooked serving, but SFAs may choose to use the dry uncooked weight. **Note:** Dry cereal grains used as an ingredient in a recipe (such as rolled oats and cornmeal in bread) credit the same as groups A-E; they require 7.38 grams of creditable grains to credit as $\frac{1}{2}$ serving. For guidance on the crediting and serving size requirements for cooked breakfast cereals, see the CSDE's handout, *Crediting Breakfast Cereals for Preschoolers in the NSLP, SBP, and ASP*.
- **Group I (RTE breakfast cereals):** RTE breakfast cereals require $\frac{1}{4}$ cup or $\frac{1}{3}$ ounce (10 grams) for ages 1-2; and $\frac{1}{3}$ cup or $\frac{1}{2}$ ounce (14 grams) for ages 3-4. If the appropriate volume of cereal weighs less than the required amount, it still credits as $\frac{1}{2}$ serving. For example, $\frac{1}{3}$ cup of flaked cereal that weighs 13 grams credits as $\frac{1}{2}$ serving for ages 3-4. For guidance on crediting RTE breakfast cereals, see the CSDE's handout, *Crediting Breakfast Cereals for Preschoolers in the NSLP, SBP, and ASP*.

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The USDA's grain servings chart applies to all creditable commercial grain products. SFAs may also use this chart for creditable grain foods made on site, if the standardized recipe indicates the weight of the prepared (cooked) serving. If the standardized recipe does not provide this information, the SFA must calculate the average weight per serving by weighing at least four samples of the cooked product. For more information, see the CSDE's handout, [Yield Study Data Form](#).

Method 2: Creditable Grains

Method 2 determines the preschool servings for grain products and recipes by calculating the total weight (grams) of creditable grains per serving. A food in groups A-E of the USDA's grain servings chart must contain 7.38 grams of creditable grains to credit as $\frac{1}{2}$ serving (the required preschool amount). A food in group H of the USDA's grain servings chart must contain 13 grams of creditable grains to credit as $\frac{1}{2}$ serving.

- **Commercial products:** SFAs must obtain a manufacturer's product formulation statement (PFS) that indicates the weight of all creditable grains per serving. This information cannot be determined from the product's Nutrition Facts label or packaging. For information on PFS forms, see the CSDE's handouts, [Product Formulation Statements](#) and [Accepting Processed Product Documentation](#), and the USDA's handouts, [Product Formulation Statement for Grains: Servings](#) (through September 30, 2021), [Sample Completed Product Formulation Statement for Grains: Servings](#) (through September 30, 2021), [Product Formulation Statement for Grains: Ounce Equivalents](#) (effective October 1, 2021), [Sample Completed Product Formulation Statement for Grains: Ounce Equivalents](#) (effective October 1, 2021), and [Tips for Evaluating a Manufacturer's Product Formulation Statement](#).
- **Foods made on site:** SFAs must determine the amount of creditable grains per serving from the weights listed for each grain ingredient in the standardized recipe. If the recipe lists grain ingredients by volume (e.g., cups and quarts), the SFA must calculate the equivalent weight (grams) for each grain ingredient. For more information, see "Method 2 calculation for recipes listing the volume of grain ingredients" on page 14.



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When Method 2 is Required for Commercial Products

There are five situations when SFAs must use method 2 (instead of the USDA's grain servings chart) to determine the grain servings of commercial grain products.

1. **Multiple creditable grains:** A creditable grain is not the first ingredient (excluding water), but the product contains more than one creditable grain. SFAs must obtain a PFS from the manufacturer to document that the **combined weight** of all creditable grains is more than the weight of the first ingredient, excluding water. For example, the yellow corn flour in the product below is not a creditable grain because it is not whole grain, enriched, or nixtamalized. To credit in the preschool meal patterns, the product's PFS must document that the combined weight of the two whole grains (whole-wheat flour and rolled oats) is more than the weight of the yellow corn flour (noncreditable grain).

Ingredients: *Yellow corn flour, whole-wheat flour, sugar, rolled oats, wheat gluten.* Contains 2% or less of each of the following: honey, salt, *oat bran*, yeast, molasses.

Note: Nixtamalization is a process in which dried corn is soaked and cooked in an alkaline (slaked lime) solution. If the product's PFS indicates that cornmeal or corn flour are nixtamalized, these ingredients are whole grain. For more information, see the CSDE's handout, [*Crediting Whole Grains in the NSLP and SBP*](#).

2. **Combination foods:** A commercial combination food contains a grain portion from groups A-E or H-I of the USDA's grain servings chart. Examples include pizza crust in pizza, noodles in lasagna, and baked chicken coated with bread crumbs or crushed cereal flakes. SFAs must obtain a PFS from the manufacturer that documents the amount of creditable grains in the **grain portion** of the product.
3. **Manufacturer's crediting claim:** The manufacturer claims that a commercial product can provide the minimum creditable grains using a serving that is **less** than the minimum weight or volume specified for that product's group in the USDA's grain servings chart.
4. **Product not listed:** A commercial product does not belong to one of the nine groups listed in the USDA's grain servings chart.
5. **SFA credits a product differently:** The SFA wants to credit a commercial product differently from the servings listed in the USDA's grain servings chart.

For each situation described above, SFAs must obtain a manufacturer's PFS that states the amount of creditable grains per serving. The PFS must also demonstrate how the product provides this

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amount according to the USDA’s regulations, guidance, or policy. SFAs must verify the accuracy of the product’s PFS prior to including the product in reimbursable meals, and must maintain all crediting documentation on file. The CSDE will review this information during the Administrative Review of school nutrition programs. **Note:** If the manufacturer will not supply a PFS, or the PFS does not provide the appropriate documentation, SFAs cannot use the product to credit as the grains component.

Sample Calculations for Commercial Products in Groups A-E

Table 1 shows a sample calculation using method 1 to determine the servings of the grains component for a commercial whole-wheat pancake product in group C. Table 2 shows a sample calculation for this same product using method 2. Each method results in a different crediting contribution for this product. One pancake credits as $\frac{3}{4}$ serving of the grains component using method 1 and 1 serving using method 2. Since the required preschool amount is $\frac{1}{2}$ serving, one pancake serves one child using method 1 and two children using method 2.

For some products, each method results in the same crediting contribution. SFAs may use **either** method, but must document how the crediting information was obtained. For more information, see “Choosing a Calculation Method” on page 11.



With method 1, SFAs must use the weight (ounces or grams) of one serving from the commercial product’s Nutrition Facts label or the manufacturer’s PFS. If the product lists ounces and grams, SFAs may choose to use either one. To convert ounces to grams, multiply ounces by 28.35.



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**Table 1. Using method 1 (USDA’s grain servings chart) to
calculate grain servings for commercial products in groups A-E**

Whole-Wheat Pancakes ¹

Manufacturer’s serving size:

1 pancake: 1 ounce (28 grams)

Group C (USDA’s grain servings chart):

1 serving = 31 grams or 1.1 ounces

½ serving = 16 grams or 0.6 ounce

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.

1. List the weight of the manufacturer’s serving size from the product’s Nutrition Facts label or PFS (1 ounce = 28.35 grams).

A	28 grams
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2. List the required weight for 1 serving for the product’s group (A-E) in the USDA’s grain servings chart. ²

B	31 grams
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3. Determine the grain servings in one serving of the product: Divide A by B.

C	0.90 grain servings per manufacturer’s serving
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4. Round down the number in C to the nearest ¼ serving. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.

D	0.75 grain servings per manufacturer’s serving (rounded)
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5. Is the amount in D at least 0.5? ³ Yes No

One pancake credits as ¾ serving of the grains component using method 1. Since the required preschool amount is ½ serving, one pancake serves one child.

¹ This product is WGR because whole-wheat flour is the first ingredient (excluding water) and the next and only other grain ingredient is enriched. For more information, see the CSDE’s handout, *Whole Grain-rich Criteria for Preschoolers in the NSLP, SBP, and ASP*.

² Calculations use the weight for the appropriate group in the USDA’s grain servings chart, *Grain Servings for Preschoolers in the NSLP, SBP, and ASP*. Pancakes are in group C.

³ Through September 30, 2021, the preschool meal patterns require ½ serving of the grains component.

Calculation Methods for Grain Servings for Preschoolers in the NSLP, SBP, and ASP

Table 2. Using method 2 (creditable grains) to calculate grain servings for commercial products in groups A-E

Whole-Wheat Pancakes ¹

Manufacturer's serving size:

1 pancake: 1 ounce (28 grams)

Group C (USDA's grain servings chart):

1 serving = 31 grams or 1.1 ounces

½ serving = 16 grams or 0.6 ounce

Creditable grains per serving (from product's PFS):

Whole-wheat flour: 9 grams

Enriched flour: 8 grams

Noncreditable grains: 0 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.

1. List the combined weight (grams) of whole and enriched grains in one serving from the product's PFS (1 ounce = 28.35 grams). ²

9 grams of whole-wheat flour +
8 grams of enriched flour =
17 grams of creditable grains

A	17	grams
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2. Determine the grain servings in one serving of the product: Divide A by 14.75 (1 serving = 14.75 grams of creditable grains).

B	1.15	grain servings per manufacturer's serving
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3. Round down the number in B to the nearest ¼ serving. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.

C	1.0	grain servings per manufacturer's serving (rounded)
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4. Is the amount in C at least 0.5? ³ Yes No

One pancake credits as 1 serving of the grains component using method 2. Since the required preschool amount is ½ serving, one pancake serves two children.

¹ This product is WGR because whole-wheat flour is the first ingredient (excluding water) and the next and only other grain ingredient is enriched. For more information, see the CSDE's handout, [Whole Grain-rich Criteria for Preschoolers in the NSLP, SBP, and ASP](#).

² Method 2 requires a manufacturer's PFS for commercial products and a standardized recipe for foods made on site by the SFA. For more information, see the CSDE's handouts, [Product Formulation Statements](#) and [Standardized Recipe Form](#).

³ Through September 30, 2021, the preschool meal patterns require ½ serving of the grains component.

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Sample Calculations for Commercial Products in Group H

Table 3 shows a sample calculation using method 1 to determine the servings for a commercial whole-grain pasta product in group H. Table 4 shows a sample calculation for this same product using method 2.

Each method results in the same crediting contribution for this product. The pasta credits as one serving of the grains component using either method. Since the required preschool amount is $\frac{1}{2}$ serving, the $\frac{1}{2}$ cup of pasta serves two children ($\frac{1}{4}$ cup each) using either method 1 or 2.

For some products, each method results in a different crediting contribution. SFAs may use either method 1 or 2, but must document how the crediting information was obtained. For more information, see “Choosing a Calculation Method” on page 10.

Note: Cereal grains in group H typically credit based on the **cooked** serving (i.e., $\frac{1}{4}$ cup credits as $\frac{1}{2}$ serving), but SFAs may choose to calculate the product’s servings based on the dry uncooked weight (13 grams dry credits as $\frac{1}{2}$ serving). With method 1, SFAs must use the weight (ounces or grams) of one serving from the commercial product’s Nutrition Facts label or the manufacturer’s PFS. If the product lists ounces and grams, SFAs may choose to use either one.



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**Table 3. Using method 1 (USDA’s grain servings chart) to
calculate grain servings for commercial products in group H**

Whole-grain Pasta ¹

Manufacturer’s serving size:
30 grams dry (½ cup cooked)

Group H (USDA’s grain servings chart):
1 serving = ½ cup cooked or 25 grams dry
½ serving = ¼ cup cooked or 13 grams dry

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

1. List the weight of the manufacturer’s serving size from the product’s Nutrition Facts label or PFS (1 ounce = 28.35 grams).

A	30	grams
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2. List the required uncooked (dry) weight (25 grams) for one serving for group H in the USDA’s grain servings chart. ²

B	25	grams
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3. Determine the grain servings in one serving of the product: Divide A by B.

C	1.2	grain servings per manufacturer’s serving
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4. Round down the number in C to the nearest ¼ serving. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.

D	1	grain servings per manufacturer’s serving (rounded)
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5. Is the amount in D at least 0.5? ³ Yes No

A ½ cup of pasta credits as 1 serving of the grains component using method 1. Since the required preschool amount is ½ serving, a ½-cup of pasta serves two children (¼ cup each).

¹ This product is WGR because whole-wheat flour is the first ingredient and the next and only other grain ingredient is enriched. For guidance on identifying WGR foods, see the CSDE’s handout, *Whole Grain-rich Criteria for Preschoolers in the NSLP, SBP, and ASP*.

² Calculations use the weight for group H, which requires ½ cup cooked or 25 grams dry to provide 1 serving, and ¼ cup cooked or 13 grams dry to provide ½ serving. For more information, see the CSDE’s handout, *Grain Servings for Preschoolers in the NSLP, SBP, and ASP*.

³ Through September 30, 2021, the preschool meal patterns require ½ serving of the grains component.

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Table 4. Using method 2 (creditable grains) to calculate grain servings for commercial products in group H

Whole-grain Pasta ¹

Manufacturer's serving size:

30 grams dry (½ cup cooked)

Group H (USDA's grain servings chart):

1 serving = ½ cup cooked or 25 grams dry

½ serving = ¼ cup cooked or 13 grams dry

Creditable grains per serving (from product's PFS):

Whole-wheat flour: 15 grams

Enriched flour: 14 grams

Noncreditable grains: 0 grams

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

1. List the combined weight (grams) of whole and enriched grains in one serving from the product's PFS (1 ounce = 28.35 grams). ²

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

A	29 grams
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2. Determine the grain servings in one serving of the product: Divide A by 25 (1 serving for group H = 25 grams of creditable grains).

B	1.16 grain servings per manufacturer's serving
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3. Round down the number in B to the nearest ¼ serving. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.

C	1.0 grain servings per manufacturer's serving (rounded)
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4. Is the amount in C at least 0.5? ³ Yes No

A ½ cup of pasta credits as 1 serving of the grains component using method 2. Since the required preschool amount is ½ serving, a ½ cup of pasta serves two children (¼ cup each).

¹ This product is WGR because whole-wheat flour is the first ingredient and the next and only other grain ingredient is enriched. For guidance on identifying WGR foods, see the CSDE's handout, *Whole Grain-rich Criteria for Preschoolers in the NSLP, SBP, and ASP*.

² Method 2 requires a manufacturer's PFS for commercial products and a standardized recipe for foods made on site by the SFA. For more information, see the CSDE's handouts, *Product Formulation Statements* and *Standardized Recipe Form*.

³ Through September 30, 2021, the preschool meal patterns require ½ serving of the grains component.

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Choosing a Calculation Method

Calculation methods 1 and 2 may result in a different crediting contribution for the same product, or may result in the same crediting contribution for the product. For example, a ½-ounce mini bagel might credit as ½ serving using method 1 (USDA’s grain servings chart), but might credit as ¾ serving using method 2 (creditable grains indicated in the manufacturer’s PFS). SFAs may choose to use **either** method for all foods in the USDA’s grain servings chart, but must document which method is used for each product.

When using method 2 for commercial products, SFAs must obtain a PFS from the manufacturer that documents the weight of all creditable grains per serving. When using method 2 for foods made on site (groups A-E), SFAs must have a standardized recipe on file that lists the weight of all creditable grains. If the recipe is not standardized and lists only the volume of grain ingredients, the SFA must calculate the weight equivalent (grams) of each grain ingredient. For more information, see “Method 2 calculation for recipes listing the volume of grain ingredients” on page 14.

When SFAs choose a calculation method for a specific product, the USDA requires that same calculation method must be used each time that same product is on the menu for that same age group. For example, if the SFA uses method 2 to determine the crediting of a whole-grain bagel for preschool menus, that same bagel on any preschool menu must 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 with the preschool meal pattern requirements for the grains component.

Sample Calculations for Foods Made on Site

SFAs must have standardized recipes on file to document the meal pattern contribution of foods prepared on site, such as breads, rolls, muffins, pizza dough, and pancakes. SFAs must determine the servings in one serving of the standardized recipe by using either:

- the appropriate weight (groups A-E) or volume (groups H-I) in the USDA’s grain servings chart (method 1); or
- the weight of creditable grains per serving (method 2).

The CSDE encourages SFAs to use method 2 for recipes in groups A-E because it provides more accurate crediting information. Group H (cereal grains) typically credits based on the cooked serving, i.e., ¼ cup credits as ½ serving (the required preschool amount).

For information on standardized recipes, see section 2 of the CSDE’s *Menu Planning Guide for Preschoolers in the NSLP, SBP, and ASP*, chapter 4 of the USDA’s *Menu Planner for School Meals*, the

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Table 5. Using method 2 (creditable grains) to calculate grain servings for recipes listing the weight of grain ingredients

WGR standardized recipe for multi-grain bread ¹

Yield: 100 servings

Serving size: one piece

Grain ingredients:

Whole-wheat flour: 8 ounces (0.5 pound)

Rolled oats: 1 pound 2 ounces (1.125 pounds) ²

Enriched flour: 1 pound

Enriched cornmeal: 8 ounces (0.5 pound) ²

<p>1. Determine the total weight (pounds) of all creditable grains in the recipe (16 ounces = 1 pound). Convert fractions to decimals, e.g., $1\frac{3}{4}$ pounds equals 1.75 pounds.</p> <p style="padding-left: 40px;">1.625 pounds of whole grains (whole-wheat flour and rolled oats) + 1.5 pounds of enriched grains (enriched flour and enriched cornmeal) = 3.125 pounds of creditable grains</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #4b3621; color: white; padding: 5px;">A</td> <td style="padding: 5px;">3.125 pounds of creditable grains</td> </tr> </table>	A	3.125 pounds of creditable grains
A	3.125 pounds of creditable grains		
<p>2. Determine the total grams of creditable grains in the recipe: Multiply A by 453.6 (1 pound = 453.6 grams).</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #4b3621; color: white; padding: 5px;">B</td> <td style="padding: 5px;">1417.5 grams of creditable grains</td> </tr> </table>	B	1417.5 grams of creditable grains
B	1417.5 grams of creditable grains		
<p>3. List the number of servings in the recipe.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #4b3621; color: white; padding: 5px;">C</td> <td style="padding: 5px;">100 servings per recipe</td> </tr> </table>	C	100 servings per recipe
C	100 servings per recipe		
<p>4. Determine the grams of creditable grains per recipe serving: Divide B by C.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #4b3621; color: white; padding: 5px;">D</td> <td style="padding: 5px;">14.175 grams of creditable grains per recipe serving</td> </tr> </table>	D	14.175 grams of creditable grains per recipe serving
D	14.175 grams of creditable grains per recipe serving		
<p>5. Determine the grain servings per recipe serving: Divide D by 14.75 (1 serving = 14.75 grams of creditable grains). ²</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #4b3621; color: white; padding: 5px;">E</td> <td style="padding: 5px;">0.96 grain servings per recipe serving</td> </tr> </table>	E	0.96 grain servings per recipe serving
E	0.96 grain servings per recipe serving		
<p>6. Round down the number in E to the nearest $\frac{1}{4}$ serving. For example, 1.49 and 1.27 round down to 1.25; and 1.24 rounds down to 1.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #4b3621; color: white; padding: 5px;">F</td> <td style="padding: 5px;">0.75 grain servings per recipe serving (rounded)</td> </tr> </table>	F	0.75 grain servings per recipe serving (rounded)
F	0.75 grain servings per recipe serving (rounded)		

5. Is the amount in F at least 0.5? ³ Yes No
 One piece credits as $\frac{3}{4}$ serving of the grains component. Since the required preschool amount is $\frac{1}{2}$ serving, one piece serves one child.

¹ This recipe is WGR because the combined weight (1.625 pounds) of all whole grains (whole-wheat flour and rolled oats) is more than the combined weight (1.5 pounds) of all enriched grains (enriched flour and enriched cornmeal). For more information, see the CSDE's handout, *Whole Grain-rich Criteria for Preschoolers in the NSLP, SBP, and ASP*.

² Dry cereal grains used as an ingredient in a recipe (such as rolled oats and cornmeal) credit the same as groups A-E (14.75 grams of creditable grains credits as 1 serving of the grains component).

³ Through September 30, 2021, the preschool meal patterns require $\frac{1}{2}$ serving of the grains component.

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Method 2 calculation for recipes listing the volume of grain ingredients

To determine the grain servings of the recipe, SFAs must first convert the volume (e.g., cups and quarts) of all grain ingredients to weight (grams). SFAs may use any of the methods below for this calculation.

- Use the manufacturer's serving size information on the Nutrition Facts label for the grain ingredient. For example, a recipe contains 2 cups of enriched flour. The product's Nutrition Facts label states that $\frac{1}{4}$ cup of enriched flour weighs 30 grams. Multiply the weight of the manufacturer's serving (30 grams) by the amount of the ingredient used in the recipe (2 cups) to determine the weight of the ingredient used in the recipe (240 grams).
- Search the USDA's [FoodData Central](#) nutrient database for grain ingredients, such as whole-wheat flour or yellow corn meal. Enter "1" in the data field for the cup measurement, and the database will provide the weight of 1 cup of that ingredient.
- Use volume equivalent charts that list the weight of 1 cup of grain ingredients. Table 6 shows the weight per cup of some commonly used grain ingredients.
- Determine the average weight of 1 cup of the grain ingredient by measuring and weighing several samples. For more information, see the CSDE's [Yield Study Form](#).

Table 7 shows how to use method 2 to calculate the servings per serving for a non-standardized recipe that lists the grain ingredients in volume (cups).



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Table 6. 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
Bread crumbs, dry, grated, plain ²	108
Bread crumbs, plain, dry, grated, seasoned ²	120
Bread crumbs, 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 Grain Servings for Preschoolers in the NSLP, SBP, and ASP

Table 6. Weights of 1 cup of commonly used grain ingredients ¹, continued

Food item	Weight (grams) per cup
Flour, buckwheat, whole groat 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
<p>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, see the CSDE's <i>Yield Study Form</i>.</p> <p>² USDA's FoodData Central database (Standard Reference (SR) Legacy Data): https://fdc.nal.usda.gov/</p> <p>³ General Mills Cereals: https://www.generalmills.com/en/Brands/Cereals</p> <p>⁴ Kellogg's Cereals: https://www.kelloggs.com/en_US/home.html</p> <p>⁵ Quaker Cereals: https://www.quakeroats.com/products</p>	

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Table 7. Using method 2 (creditable grains) to calculate grain servings for recipes listing the volume of grain ingredients

Multi-grain bread ¹

25 servings (one piece)		Convert cups to grams	
Grain ingredient	Measure	Grams per cup ²	Weight (grams)
Whole-wheat flour	2 cups	X 120 =	240.00 grams
Rolled oats ³	¾ cup	X 181 =	60.75 grams
All-purpose enriched flour	2 cups	X 125 =	250.00 grams
Enriched cornmeal ³	¼ cup	X 138 =	34.50 grams
Total weight of creditable grains:			585.25 grams

1. Determine the combined weight (grams) of all creditable grains in the recipe.

A	585.25 grams
----------	---------------------

300.75 grams of whole grains (whole-wheat flour and rolled oats) +
284.5 grams of enriched grains (all-purpose enriched flour and enriched cornmeal) =
585.25 grams of creditable grains

2. List the number of servings in the recipe.

B	25 servings
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3. Determine the grams of creditable grains per serving: Divide A by B.

C	23.41 grams of creditable grains per recipe serving
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4. Determine the grain servings per recipe serving: Divide D by 14.75 (1 serving = 14.75 grams of creditable grains). ³

D	1.59 grain servings per recipe serving
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5. Round down the number in D to the nearest ¼ serving. For example, 1.49 and 1.27 round down to 1.25, and 1.24 rounds down to 1.

E	1.5 grain servings per recipe serving (rounded)
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6. Is the amount in E at least 0.5? ⁴ Yes No

One piece credits as 1½ servings of the grains component. Since the required preschool amount is ½ serving, one piece serves three children.

¹ This recipe is WGR because the combined weight (1.625 pounds) of all whole grains (whole-wheat flour and rolled oats) is more than the combined weight (1.5 pounds) of all enriched grains (enriched flour and enriched cornmeal). For more information, see the CSDE's handout, *Whole Grain-rich Criteria for Preschoolers in the NSLP, SBP, and ASP*.

² The grams per cup are from the USDA's [FoodData Central](#) database (Standard Reference (SR) Legacy Data).

³ Dry cereal grains used as an ingredient in a recipe (such as rolled oats and cornmeal) credit the same as groups A-E (14.75 grams of creditable grains credits as 1 serving of the grains component).

⁴ Through September 30, 2021, the preschool meal patterns require ½ serving of the grains component.

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Crediting Worksheets for Grains

The CSDE's CACFP crediting worksheets evaluate grain-based foods for compliance with the CACFP crediting, WGR, and serving requirements. Since the preschool and CACFP meal pattern requirements are the same, SFAs may use the CSDE's CACFP crediting worksheets to determine if grain foods comply with the preschool meal patterns. The worksheets include:

- Child Care Worksheet 1: Crediting Commercial Grains in the CACFP;
- Child Care Worksheet 2: Crediting Ready-to-eat Breakfast Cereals in the CACFP;
- Child Care Worksheet 3: Crediting Cooked Breakfast Cereals in the CACFP;
- Child Care Worksheet 4: Crediting Family-size Recipes for Grains in the CACFP; and
- Child Care Worksheet 5: Crediting Quantity Recipes for Grains in the CACFP.

These worksheets are available in the “[Documents/Forms](#)” section of the CSDE's [Crediting Foods in CACFP Child Care Programs](#) webpage.



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Resources

Accepting Processed Product Documentation in the NSLP and SBP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/AcceptDoc.pdf>

Afterschool Snack Program Handbook:

<http://portal.ct.gov/-/media/SDE/Nutrition/ASP/ASPHandbook.pdf>

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

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

CACFP Best Practices (USDA):

https://fns-prod.azureedge.net/sites/default/files/cacfp/CACFP_bestpractices.pdf

CACFP Meal Pattern Training Worksheets (USDA):

<https://www.fns.usda.gov/tn/cacfp-meal-pattern-training-worksheets>

Child Care Worksheet 1: Crediting Commercial Grain in the CACFP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/CACFP/Crediting/CACFPCredit1.xlsx>

Child Care Worksheet 2: Crediting Ready-to-eat Breakfast Cereals in the CACFP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/CACFP/Crediting/CACFPCredit2.xlsx>

Child Care Worksheet 3: Crediting Cooked Breakfast Cereals in the CACFP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/CACFP/Crediting/CACFPCredit3.xlsx>

Child Care Worksheet 4: Crediting Family-size Recipes for Grains in the CACFP (CSDE):

<http://portal.ct.gov/-/media/SDE/Nutrition/CACFP/Crediting/CACFPCredit4.xlsx>

Child Care Worksheet 5: Crediting Quantity Recipes for Grains in the CACFP

<http://portal.ct.gov/-/media/SDE/Nutrition/CACFP/Crediting/CACFPCredit5.xls>

Child Nutrition (CN) Labeling Program (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/CNlabel.pdf>

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

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/ComparisonGrainCrediting.pdf>

Crediting Breakfast Cereals for Preschoolers in the NSLP, SBP, and ASP:

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/CreditCerealsPreschool.pdf>

Crediting Enriched Grains in the NSLP and SBP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/CreditEnrichedGrains.pdf>

Crediting Whole Grains in the NSLP and SBP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/CreditWholeGrains.pdf>

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Food Buying Guide for Child Nutrition Programs (USDA):

<https://www.fns.usda.gov/tn/food-buying-guide-for-child-nutrition-programs>

FoodData Central (USDA):

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

Grain Ounce Equivalents for Preschoolers in the NSLP, SBP, and ASP

(effective October 1, 2021) (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Preschool/Preschoolozeq.pdf>

Grain Servings for Preschoolers in the NSLP, SBP, and ASP

(through September 30, 2021) (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Preschool/Preschoolozeq.pdf>

Grain-Based Desserts in the CACFP (USDA):

<https://fns-prod.azureedge.net/sites/default/files/tn/CACFPGrainBasedDesserts.pdf>

How to Identify Creditable Grains in the CACFP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/CACFP/Crediting/IdentifyCreditableGrainsCACFP.pdf>

[/media/SDE/Nutrition/CACFP/Crediting/IdentifyCreditableGrainsCACFP.pdf](https://portal.ct.gov/-/media/SDE/Nutrition/CACFP/Crediting/IdentifyCreditableGrainsCACFP.pdf)

Meal Patterns for Preschoolers in School Nutrition Programs (CSDE webpage)

<https://portal.ct.gov/SDE/Nutrition/Meal-Patterns-Preschoolers-in-School-Nutrition-Programs/Documents>

Menu Planning Guide for Preschoolers in the NSLP, SBP, and ASP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Preschool/MPGpreschool.pdf>

Product Formulation Statement for Grains: Ounce Equivalents (effective October 1, 2021) (USDA):

https://fns-prod.azureedge.net/sites/default/files/resource-files/PFS_Documenting_Grains_oz_eq.pdf

Product Formulation Statement for Grains: Servings (through September 30, 2021) (USDA):

https://fns-prod.azureedge.net/sites/default/files/resource-files/PFS_Documenting_Grains_Breads_Servings.pdf

Product Formulation Statements (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/PFS.pdf>

Sample Completed Product Formulation Statement for Grains: Ounce Equivalents (effective October 1, 2021) (USDA):

https://fns-prod.azureedge.net/sites/default/files/resource-files/PFS_Sample_oz_eq.pdf

Sample Completed Product Formulation Statement for Grains: Servings (through September 30, 2021) (USDA):

http://https://fns-prod.azureedge.net/sites/default/files/resource-files/PFS_Samples_Grains_Breads_Servings.pdf

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Standardized Recipe Form (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/StdRecipeSchools.doc>

USDA Final Rule (81 FR 24347): CACFP Meal Pattern Revisions Related to the Healthy, Hunger-Free Kids Act of 2010

<https://www.fns.usda.gov/cacfp/fr-042516>

USDA Final Rule Corrections (81 FR 75671): Child and Adult Care Food Program: Meal Pattern Revisions Related to the Healthy, Hunger-Free Kids Act of 2010:

<https://www.federalregister.gov/documents/2016/11/01/2016-26339/child-and-adult-care-food-program-meal-pattern-revisions-related-to-the-healthy-hunger-free-kids-act>

USDA Final Rule (84 FR 50287): Delayed Implementation of Grains Ounce Equivalents in the Child and Adult Care Food Program:

<https://www.federalregister.gov/documents/2019/09/25/2019-20808/delayed-implementation-of-grains-ounce-equivalents-in-the-child-and-adult-care-food-program>

USDA Memo CACFP 09-2018: Grain Requirements in the Child and Adult Care Food Program; Questions and Answers:

<https://www.fns.usda.gov/cacfp/grain-requirements-cacfp-questions-and-answers>

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>

Whole Grain-rich Criteria for Preschoolers in the NSLP and SBP (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/WGRCriteriapreschool.pdf>

Yield Study Form (CSDE):

<https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/YieldStudy.pdf>

Calculation Methods for Grain Servings for Preschoolers in the NSLP, SBP, and ASP



For more information, review the CSDE's guide, *Menu Planning Guide for Preschoolers in the NSLP, SBP, and ASP*, and visit the CSDE's [Meal Patterns for Preschoolers in School Nutrition Programs](#) webpage, or contact the [school nutrition programs staff](#) in the CSDE's Bureau of Health/Nutrition, Family Services and Adult Education, 450 Columbus Boulevard, Suite 504, Hartford, CT 06103-1841.

This document is available at <https://portal.ct.gov/-/media/SDE/Nutrition/NSLP/Crediting/GrainCalcPreschool.pdf>.

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