USDA Food and Nutrition Service
U.S. DEPARTMENT OF AGRICULTURE

Determining Ounce Equivalents of Grains in Child and Adult Care Food Program Recipes

Grain items prepared from scratch can be a wonderful addition to Child and Adult Care Food Program (CACFP) menus. These items may count toward the minimum amount of grains required at CACFP meals and snacks, which are listed in ounce equivalents (oz eq). **One ounce equivalent (oz eq) is equal to 16 grams of grains.**

To determine how many oz eq of grains are in one serving of a recipe, you can:

A Complete the Homemade Grains Worksheet on page 6.

Or

B Weigh one serving of the grain item. Compare the weight of the item to what's listed in the "Using Ounce Equivalents for Grains in the CACFP" worksheet at TeamNutrition.USDA.gov. You can also compare the weight of the item to what's listed in "Exhibit A: Grains Requirements for Child Nutrition Programs" at foodbuyingguide.fns.usda.gov.

FNS-876 Slightly Revised May 2022
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Using the Homemade Grains Worksheet

You can use the Homemade Grains Worksheet on page 6 to help determine how many oz eq of grains are in one serving of your recipe. Complete the worksheet by following the steps below:

1 Write the name of the recipe on the line after "Homemade Grains Worksheet." Then, list each creditable grain ingredient in the recipe. Creditable grains include whole grains, enriched grains, bran, and germ. See the Grains Conversion Chart on page 5 for a list of commonly used grain ingredients. If an ingredient in your recipe is not creditable, do not include it in the Homemade Grains Worksheet.

Pizza Crust

Yield: 25 servings

Ingredients

- 3 ¼ cups enriched bread flour
- 3 ½ cups whole-wheat flour
- ½ cup milk
- ⅓ cup sugar
- 1 tablespoon active dry yeast

The creditable grain ingredients in this recipe are enriched bread flour and whole-wheat flour.

Homemade Grains Worksheet: Pizza Crust

1 Grain Ingredient	2 Amount	Multiply by	3 Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour		x		=	
Whole-wheat flour		x		=	
		5 Total Grams of Creditable Grains			

2 List the amount of each creditable grain ingredient in the recipe. If amounts are listed as fractions, change the amounts to decimals by using the Fractions and Decimals Chart below.

Fractions and Decimals Chart		
Fraction	Equals	Decimal
1/8	=	0.125
1/4	=	0.25
1/3	=	0.333
3/8	=	0.375
1/2	=	0.5
5/8	=	0.625
2/3	=	0.667
3/4	=	0.75
7/8	=	0.875

Pizza Crust

Yield: 25 servings

Ingredients

- 3 ¼ cups enriched bread flour
- 3 ½ cups whole-wheat flour
- ½ cup milk
- ⅓ cup sugar
- 1 tablespoon active dry yeast

3 ¼ cups = 3.25 cups
3 ½ cups = 3.5 cups

1 Grain Ingredient	2 Amount	Multiply by	3 Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour	3.25 cups	x		=	
Whole-wheat flour	3.5 cups	x		=	
		5 Total Grams of Creditable Grains			

3 If the recipe lists the amount of grain ingredients in grams (g), skip to Step 5. If amounts are listed as cups, ounces, or pounds, you will need to change these measurements to grams. To do so, use the Grains Conversion Chart on page 5 to find the conversion factor for each grain ingredient. Write the conversion factor for each grain ingredient on the worksheet. If the recipe has a creditable grain ingredient that is not listed in the chart, you will need to weigh your ingredient in grams.

1 Grain Ingredient	2 Amount	Multiply by	3 Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour	3.25 cups	x	137 g	=	
Whole-wheat flour	3.5 cups	x	120 g	=	

4 Multiply the amount of the creditable grain ingredient by the conversion factor to determine grams of the ingredient. If you have weighed the ingredient, enter the weight under the "Grams of Grains" column.

1 Grain Ingredient	2 Amount	Multiply by	3 Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour	3.25 cups	x	137 g	=	445.25 g
Whole-wheat flour	3.5 cups	x	120 g	=	420 g
		5 Total Grams of Creditable Grains			

5 Add the grams of all creditable grain ingredients to determine the total grams of creditable grains in the recipe.

1 Grain Ingredient	2 Amount	Multiply by	3 Conversion Factor	Equals	4 Grams of Grains
Enriched bread flour	3.25 cups	x	137 g	=	445.25 g
Whole-wheat flour	3.5 cups	x	120 g	=	420 g
		5 Total Grams of Creditable Grains			865.25 g

445.25 grams of enriched bread flour + 420 grams of whole-wheat flour = 865.25 grams of creditable grains

6 Divide the total grams of creditable grains in the recipe (from Step 5) by the number of servings (yield) in the recipe. This tells you the amount of creditable grains per serving.

865.25 grams of creditable grains ÷ 25 servings = 34.61 grams of creditable grains per serving

7 Divide the grams of creditable grains per serving (from Step 6) by 16 grams. This tells you how many ounce equivalents of grains are in each serving.

34.61 grams of creditable grains per serving ÷ 16 grams = 2.16 oz eq of grains per serving

8 If the answer in Step 7 ends in a decimal, round the number **down** to the nearest 0.25 oz eq of grains.

2.16 rounds down to 2.
One serving of this pizza crust provides 2 oz eq of grains.

Grains Conversion Chart

Any ingredient: 1 pound (lb) = 453.6 g, 1 ounce (oz) = 28.35 g

Ingredient	Measurement Unit	Conversion Factor
All-Purpose Flour, Enriched, Bleached and Unbleached	1 Cup	125 g
Almond Flour (Not Creditable)	-	-
Bread Flour, Enriched	1 Cup	137 g
Bromated Flour (Not Creditable)	-	-
Chia Seeds (Not Creditable as a Grain)	-	-
Corn Fiber (Not Creditable)	-	-
Corn Masa, Enriched	1 Cup	114 g
Cornmeal, Degerminated (Not Creditable)	-	-
Cornmeal, Enriched, Degermed	1 Cup	138 g
Cornmeal, Whole Grain	1 Cup	122 g
Corn Flour, Yellow (Not Creditable)	-	-
Corn Flour, Whole Grain	1 Cup	117 g
Cracked Wheat	1 Cup	160 g
Flaxseed (Not Creditable as a Grain)	-	-
Lentil Flour (Not Creditable as a Grain)	-	-
Oat Bran	1 Cup	94 g
Oat Fiber (Not Creditable)	-	-
Oat Flour, Whole Grain	1 Cup	120 g
Oats, Quick-Cooking or Rolled	1 Cup	81 g
Rice Flour, Brown	1 Cup	158 g
Rice Flour, Enriched	1 Cup	160 g
Rice Flour, Unenriched (Not Creditable)	-	-
Self-Rising Flour, Enriched	1 Cup	125 g
Sorghum Flour	1 Cup	121 g
Tapioca Flour (Not Creditable)	-	-
USDA Foods White Whole Wheat/Enriched 60/40 Blend	1 Cup	120 g
Wheat Bran	1 Cup	58 g
Wheat Flour, Unenriched (Not Creditable)	-	-
Wheat Germ	1 Cup	115 g
White Flour, Enriched	1 Cup	125 g
White Flour, Unenriched (Not Creditable)	-	-
Whole-Wheat Flour	1 Cup	120 g

Try It Out!

Use the Homemade Grains Worksheet to determine how many oz eq of grains are in one serving of the recipe.

Multigrain Muffins

Yield: 15 servings

- ☐ 1 cup whole-wheat flour
- ☐ ½ cup enriched all-purpose flour
- ☐ 1 cup oat bran
- ☐ ⅓ cup flaxseeds

Homemade Grains Worksheet: _____

1 Grain Ingredient	2 Amount		3 Conversion Factor		4 Grams of Grains
		x		=	
		x		=	
		x		=	
		x		=	
		5 Total Grams of Creditable Grains			

6. _____ grams of creditable grains ÷ _____ number of servings = _____ grams of creditable grains per serving

7. _____ grams of creditable grains per serving ÷ 16 grams of grains per oz eq = _____ oz eq of grains per serving

8. Round amount of oz eq down to nearest 0.25 oz eq = _____ oz eq of grains per serving

ANSWER KEY

Homemade Grains Worksheet: Multigrain Muffins

1 Grain Ingredient	2 Amount		3 Conversion Factor		4 Grams of Grains
Whole-Wheat Flour	1 cup	x	120 g	=	120 g
Enriched All-Purpose Flour	½ cup	x	125 g	=	62.5 g
Oat Bran	1 cup	x	94 g	=	94 g
		x		=	
5 Total Grams of Creditable Grains					276.5

6. 276.5 grams of creditable grains ÷ 15 number of servings = 18.43 grams of creditable grains per serving

7. 18.43 grams of creditable grains per serving ÷ 16 grams of grains per oz eq = 1.15 oz eq of grains per serving

8. Round amount of oz eq down to nearest 0.25 oz eq = 1 oz eq of grains per serving

More training, menu planning, and nutrition education materials for the CACFP can be found at TeamNutrition.USDA.gov.