Crediting Unprocessed Food Items in the USDA Child Nutrition Programs

Example 1: Raw to Cooked Ground Beef
We want to make hamburgers using raw, ground beef purchased from a local producer. How much should each raw hamburger weigh to yield a 2 oz eq. cooked hamburger patty?

Step 1: When determining the yield of raw, ground beef, check the USDA Food Buying Guide (FBG) (https://foodbuyingguide.fns.usda.gov/) to determine how many ounces of cooked product will come from 16 ounces (1 lb.) of raw product. The yield of ground beef changes based on the lean meat to fat percentage (i.e., 80/20, 90/10) so, make sure to select the FBG entry that matches the product that was purchased. See the screenshot below for the yield information for an 80/20 ground beef product.

Food Item Details

Meal Component	Meats/Meat Alternates[1]
Category	Beef and Beef Products
Subcategory	BEEF, GROUND, fresh or frozen
Food As Purchased, AP	**Beef, Ground, fresh or frozen**[9],[10] *no more than 20% fat, Includes USDA Foods, (Like IMPS #136)*
Purchase Unit	Pound
Servings per Purchase Unit, EP	11.80
Serving Size per Meal Contribution	1 oz cooked lean meat
Purchase Units for 100 Servings	8.50
Additional Information	1 lb AP = 0.74 lb cooked, drained, lean meat

Note: When searching for ground beef in the FBG, pay special attention to the Food As Purchased column and Serving Size per Meal Contribution column. The Food As Purchased column indicates the state of the product when purchased, the Serving Size per Meal Contribution column indicates how the product is served to students. Choose the entry that most closely matches the product on-hand and click the blue hyperlink for that entry in the Food As Purchased column. This expands the Food Item Details screen.

The Food Item Details states that 1 lb. of raw, 80/20 ground beef will yield 0.74 lb. or 11.80 ounces of cooked meat. This tells the same information but in different units.

Step 2: Set-up a cross multiplication problem. The known information (from the FBG) is on the left of the equation, cooked weight from one pound over one pound of raw weight. The cooked weight will vary based on the lean meat to fat ratio of your beef product. The desired cooked weight (per portion) is on the right. In this example, the desired cooked weight is 2.0 oz eq. per portion. The desired cooked weight could be 1.0 oz eq. or 1.5 oz eq. depending on the operation.

$$\frac{\underline{11.80 \text{ oz (cooked weight)}}}{16.0 \text{ oz (raw weight)}} = \frac{\underline{2.0 \text{ oz eq. (desired cooked weight)}}}{x \text{ (unknown raw weight)}}$$

Step 3: Solve by cross-multiplying and dividing by "x."

$$\frac{11.80 \text{ oz (cooked weight)}}{16.0 \text{ oz (raw weight)}} \times \frac{2.0 \text{ oz eq. (desired cooked weight)}}{x \text{ (unknown raw weight)}}$$

$$11.80x = 32oz$$
$$32/11.8 = 2.7 \text{ oz}$$

Based on this information, to yield a 2.0 oz eq. cooked hamburger patty, the raw hamburger patty (before cooking) must weigh 2.7 oz. A total of 0.7 ounces of weight is lost during the cooking process.

Example 2: Cups to Pounds for Sliced Apples
A school would like to participate in this year's Great Apple Crunch and will purchase fresh, local apples for all students. There are 150 students and each will receive ½ cup of sliced apples. How many pounds of apples should the school purchase?

Step 1: Use the Search function in the USDA Food Buying Guide (FBG) to search for apples. Notice all the entries for *fresh* apples in the Food As Purchased column. Next, look at the Serving Size per Meal Contribution column. Observe that there are entries for raw and baked fruit, cored or not cored, peeled or unpeeled. Remember to choose the Serving Size per Meal Contribution that best matches how the food will be served to students. The school will serve apple slices, best matching the entry for ¼ cup raw, unpeeled, cored, sliced fruit.

Click the blue hyperlink in the Food As Purchased column for this entry. This expands the Food Item Details for that entry.

Food Item Details

Meal Component	Fruits
Category	Fruit and Fruit Juice
Subcategory	APPLES
Food As Purchased, AP	**Apples, fresh** *Whole, Includes USDA Foods*
Purchase Unit	Pound
Servings per Purchase Unit, EP	7.28
Serving Size per Meal Contribution ⓘ	1/2 ⌄ cup raw, unpeeled, cored, sliced fruit
Purchase Units for 100 Servings	13.80
Additional Information	1 lb AP = 0.91 lb raw, unpeeled, cored apple
Footnote	

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Notice that for produce, the portion size can be changed in the Serving Size per Meal Contribution row to match the planned serving size. In the example, the planned portion size is ½ cup sliced apples so, the serving size has been changed to ½ cup. Look at the Servings per Purchase Unit row, which is 7.28. The Purchase Unit noted directly above is Pound. This means that every pound of fresh apples will yield 7.28, ½ cup servings of sliced apples.

Step 2: To determine how many pounds of apples to purchase for 150, ½ cup servings, set-up a cross multiplication equation. The known information goes on the left. Based on the Food Item Details for this product, 7.28, ½ cup servings will come from 1 lb. of apples. On the right, is the desired information. The school wants 150, ½ cup servings but the pounds of apples to purchase to yield this amount is unknown.

$$\frac{7.28 \ (\text{½ cup servings})}{1 \text{ lb. apples}} = \frac{150 \ (\text{½ cup servings})}{x \ (\text{unknown lbs. apples})}$$

Step 3: Solve the equation by cross-multiplying and dividing by "x."

$$\frac{7.28 \ (\text{½ cup servings})}{1 \text{ lb. apples}} = \frac{150 \ (\text{½ cup servings})}{x \ (\text{unknown lbs. apples})}$$

$$7.28x = 150$$
$$150/7.28 = 20.6 \text{ lbs.}$$

The school must purchase 20.6 lbs. or rounded up to 21 lbs. of apples to yield 150, ½ cup servings of sliced apples.

Example 3: Stocking Your Garden Bar
The Ag teacher brought 25 lbs. of carrots to the kitchen to add to the garden bar at lunch. How many ½ cup servings of carrot strips will 25 lbs. of carrots yield?

Step 1: Search the USDA Food Buying Guide (FBG) for carrots. Notice all the entries for *fresh* carrots in the Food As Purchased column. Next, look at the Serving Size per Meal Contribution column. Observe that there are entries for carrots that will be served in strips, chopped, or shredded. Choose the entry for strips as that is the desired end product and click on the blue hyperlink for that row to expand the Food Item Details screen.

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Food Item Details

Meal Component	Vegetables
Category	Red/Orange Vegetables
Subcategory	CARROTS
Food As Purchased, AP	**Carrots, fresh** *Without tops*
Purchase Unit	Pound
Servings per Purchase Unit, EP	5.15
Serving Size per Meal Contribution ⓘ	1/2 ⌄ cup raw vegetable strips (about 6 strips, 4 inch by 1/2 inch)
Purchase Units for 100 Servings	19.60
Additional Information	1 lb AP = 0.70 lb ready-to-cook, or serve raw carrot sticks
Footnote	

Change the Serving Size per Meal Contribution to match the planned serving size of ½ cup. The Servings per Purchase Unit row states that every pound of fresh carrots (without tops) will yield 5.15, ½ cup servings of carrot sticks (strips).

Step 2: Set-up the cross multiplication problem. The known information goes on the left. From the Food Item Details, 5.15, ½ cup servings will come from 1 lb. of fresh carrots. On the right, is the unknown information. There are 25 lbs. of carrots but it is unknown how many ½ cup servings of fresh carrot strips that will provide.

$$\frac{5.15\ (\text{½ cup servings})}{1\ \text{lb. carrots}} = \frac{x\ (\text{½ cup servings})}{25\ \text{lbs. of carrots}}$$

Step 3: Solve the equation by cross-multiplying and dividing by "x."

$$\frac{5.15\ (\text{½ cup servings})}{1\ \text{lb. carrots}} \diagup\!\!\!\diagdown \frac{x\ (\text{½ cup servings})}{25\ \text{lbs. of carrots}}$$

1x = 128.75
128.75/1 = 128.75, ½ cup servings

Based on this information, 25 lbs. of raw carrots (without tops) will yield 128, ½ cup servings of carrot strips.

For assistance with crediting food items towards the meal patterns contact a [Public Health Nutritionist](#).