



Food and Nutrition Service
U.S. DEPARTMENT OF AGRICULTURE

Offering Smoothies

as Part of Reimbursable School Meals

Grades Kindergarten Through 12 (K-12)



Look Inside For:

- Sample Menus
- Menu Planning Ideas
- Crediting Tips
- Success Stories
- and more!






Offering Smoothies in School Meals

Smoothies may be offered as part of reimbursable meals in the U.S. Department of Agriculture's (USDA) National School Lunch Program (NSLP) and School Breakfast Program (SBP). Milk, yogurt, fruits, and vegetables used in smoothies may credit toward breakfast or lunch meal pattern requirements. Fruits and vegetables used in smoothies credit as juice. Juice may be used to meet up to half of the meal pattern fruit and vegetable requirements in a week. Smoothies may be made from scratch, commercially-prepared mixes, or be commercially pre-packaged (ready to consume) smoothies.

The sample menu below shows how smoothies may be included as a part of an Offer versus Serve (OVS) meal service for kindergarten through grade 12. Note that some food products contribute more than the required amount for a meal component. This "extra" food counts towards weekly dietary specifications for calories, saturated fats, and sodium. Verify the crediting of foods you wish to include on your menus by using the *Food Buying Guide for Child Nutrition Programs (FBG)*, a standardized recipe, a Child Nutrition (CN) label, or a Product Formulation Statement (PFS).

Sample School Breakfast Menu for Grades K-12 (Offer Versus Serve)

Meal Component	Monday	Tuesday	Wednesday	Thursday	Friday
 <p>Milk¹</p>	Choice of Milk (1 cup)	Choice of Milk (1 cup)	Choice of Milk (1 cup) or 20 fl oz Strawberry, Yogurt, and Milk Smoothie 1 cup Milk	Choice of Milk (1 cup)	Choice of Milk (1 cup)
 <p>Fruits</p>	Choose at least one: Grapes (½ cup) Melon (½ cup)	Choose at least one: 8 fl oz Blueberry and Yogurt Smoothie ½ cup Pureed Blueberries Apricots (½ cup)	Choose at least one: 20 fl oz Strawberry, Yogurt, and Milk Smoothie 1 cup Pureed Strawberries Orange Wedges⁴ (½ cup)	Choose at least one: Apple Slices (½ cup) Raisins (¼ cup)	Choose at least one: 8 fl oz Peach and Yogurt Smoothie ½ cup Pureed Peaches Mixed Berries (½ cup)
 <p>Grains and Meats/ Meat Alternates²</p>	1 WGR Bagel (2 oz eq)	8 fl oz Blueberry and Yogurt Smoothie ½ cup Low-Fat Vanilla Greek Yogurt (1 oz eq) and/or 1 cup WGR Toasted O's Cereal (1 oz eq)	2 WGR Pancakes³ (2 oz eq) or 2 oz WGR Muffin (1 oz eq) and/or 20 fl oz Strawberry, Yogurt, and Milk Smoothie ½ cup Low-Fat Strawberry Yogurt (1 oz eq)	1 cup Oatmeal (2 oz eq)	8 fl oz Peach and Yogurt Smoothie ½ cup Low-Fat Peach Yogurt (1 oz eq) and/or 1 cup WGR Flaked Cereal (1 oz eq)

WGR = Whole Grain-Rich

fl oz = Fluid Ounce

oz eq = Ounce Equivalent

¹A choice of low-fat and fat-free milks are offered.

²May substitute 1 oz eq meats/meat alternates for 1 oz eq grains after 1 oz eq minimum grains requirement is offered.

³This item is from a USDA standardized recipe, which is available at the Institute for Child Nutrition's (ICN) Child Nutrition Recipe Box: <https://theicn.org/cnr/recipes-for-schools>. If using a commercially prepared product, document the meal pattern contribution with a CN label or PFS.

⁴The smoothie meets the requirement for fruit. The orange slices here provide students with an "extra" fruit.

The milk in the 20 fl oz **Strawberry, Yogurt, and Milk Smoothie** may count toward one of the milk offerings, but you must also offer the choice of another type of milk.

This 20 fl oz smoothie may be too large for some kids. If you offer this smoothie in smaller amounts (less than the full 20 fl oz), it will no longer provide 1 cup of milk and the smoothie cannot count as a food item toward the milk component.

The fruits in the smoothies count toward the weekly juice limit. In this weekly menu, 2 of the 5½ cups of fruits available for students to take at breakfast are in the form of juice.

About the Sample Menu

Students must take a ½ cup of fruits and/or vegetables and the full minimum serving amount of two other food items for a reimbursable breakfast.

Smoothies on Tuesday and Friday

- Under OVS, the **Blueberry and Yogurt Smoothie** and the **Peach and Yogurt Smoothie** may be counted as two food items (½ cup fruits and 1 oz eq meat alternates). The student must select at least one additional item for a reimbursable breakfast. See how a student could make a reimbursable breakfast below.

Smoothie on Wednesday

- The **Strawberry, Yogurt, and Milk Smoothie** may be counted as three food items (1 cup milk, 1 cup fruits, and 1 oz eq meat alternates). See how a student could make a reimbursable breakfast below.



Examples of Reimbursable Breakfasts with Smoothies



- **Blueberry and Yogurt Smoothie**, Apricots, WGR Cereal, and Milk
- **Blueberry and Yogurt Smoothie**, Apricots, and WGR Cereal
- **Blueberry and Yogurt Smoothie** and Apricots
- **Blueberry and Yogurt Smoothie** and Milk








- **Strawberry, Yogurt, and Milk Smoothie**, Orange Wedges, and WGR Muffin
- **Strawberry, Yogurt, and Milk Smoothie** and Orange Wedges
- **Strawberry, Yogurt, and Milk Smoothie** and WGR Muffin
- **Strawberry, Yogurt, and Milk Smoothie**



- **Peach and Yogurt Smoothie**, Mixed Berries, WGR Cereal, and Milk
- **Peach and Yogurt Smoothie**, Mixed Berries, and WGR Cereal
- **Peach and Yogurt Smoothie**, Mixed Berries, and Milk
- **Peach and Yogurt Smoothie**, WGR Cereal, and Milk
- **Peach and Yogurt Smoothie** and Mixed Berries
- **Peach and Yogurt Smoothie** and WGR Cereal
- **Peach and Yogurt Smoothie** and Milk

Sample School Lunch Menu for Grades K-8 (Offer Versus Serve)

Meal Component	Monday	Tuesday	Wednesday	Thursday	Friday
 Milk¹	Choice of Milk (1 cup)	Choice of Milk (1 cup)	Choice of Milk (1 cup)	Choice of Milk (1 cup)	Choice of Milk (1 cup)
 Grains	Pulled Pork Sandwich 1 WGR Hamburger Bun (2 oz eq)	Grilled Chicken Sandwich 1 WGR Hamburger Bun (2 oz eq)	Peanut Butter and Jelly Sandwich 2 slices WGR Bread (2 oz eq)	Spaghetti and Meat Sauce² ½ cup Whole Wheat Spaghetti (1 oz eq)	Bean Burrito 1 Whole Wheat Tortilla (1 oz eq)
 Meats and Meat Alternates	Pulled Pork Sandwich 2 oz Pulled Pork (2 oz eq)	8 fl oz Blueberry and Yogurt Smoothie ½ cup Low-Fat Vanilla Greek Yogurt (1 oz eq) and/or Grilled Chicken Sandwich 1¼ oz Grilled Chicken Strips (1 oz eq)	8 fl oz Grape and Yogurt Smoothie ½ cup Low-Fat Vanilla Yogurt (1 oz eq) and/or Peanut Butter and Jelly Sandwich 2 tablespoons Peanut (or Sunflower Seed) Butter (1 oz eq)	Spaghetti and Meat Sauce² ½ cup Meat Sauce (2 oz eq)	Bean Burrito ¼ cup cheese (1 oz eq) and/or 4 oz Low-Fat Strawberry Yogurt (1 oz eq)
 Fruits	Baked Apples (½ cup)	8 fl oz Blueberry and Yogurt Smoothie ½ cup Pureed Blueberries and/or Diced Pears (½ cup)	8 fl oz Grape and Yogurt Smoothie ½ cup Grape Juice (100 percent, full-strength) and/or Melon Cubes (½ cup)	Orange Wedges (½ cup)	Grapes (½ cup)
 Vegetables	Baked Sweet Potato Fries (½ cup red/orange vegetable) and/or Creamy Coleslaw² (½ cup other vegetable)	Salad with Romaine Lettuce, Cherry Tomatoes, and Cucumbers (½ cup of dark green, ¼ cup red/orange, and ¼ cup other vegetable) and/or Corn (½ cup starchy vegetable)	Carrot Sticks (½ cup red/orange vegetable) and/or Celery Sticks (½ cup other vegetable)	Spaghetti and Meat Sauce² ½ cup Meat Sauce (¾ cup red/orange vegetable) and Roasted Broccoli (½ cup dark green vegetable)	Bean Burrito ½ cup Black Beans (½ cup legumes) and Salsa (¼ cup red/orange vegetable)

WGR = Whole Grain-Rich

fl oz = Fluid Ounce

oz eq = Ounce Equivalent

¹A choice of low-fat and fat-free milks are offered.

²This item is from a USDA standardized recipe, which is available at the Institute for Child Nutrition's (ICN) Child Nutrition Recipe Box: <https://theicn.org/cnrb/recipes-for-schools>. If using a commercially prepared product, document the meal pattern contribution with a CN label or PFS.

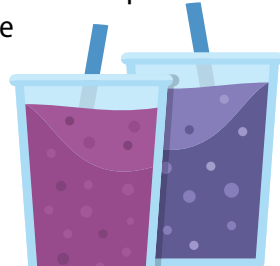
The fruits in the smoothies count toward the weekly juice limit. In this weekly menu, 1 of the 3½ cups of fruits available for students to take at lunch are in the form of juice.

About the Sample Menu

Students must take at least a ½ cup of fruits and/or vegetables and the full minimum serving amounts of two other meal components for a reimbursable lunch.

Smoothies on Tuesday and Wednesday

- The **Blueberry and Yogurt Smoothie** and **Grape and Yogurt Smoothie** both provide ½ cup fruit and 1 oz eq meat alternates. If the student selects the smoothie, he or she must also select the main entrée, vegetable, and/or milk. See how a student could make a reimbursable lunch below.



Examples of Reimbursable Lunches with Smoothies








- **Blueberry and Yogurt Smoothie**, Diced Pears, Grilled Chicken Sandwich, Milk, Salad, and Corn
- **Blueberry and Yogurt Smoothie**, Diced Pears, and Grilled Chicken Sandwich
- **Blueberry and Yogurt Smoothie** and Grilled Chicken Sandwich
- **Blueberry and Yogurt Smoothie**, Salad, and Corn
- **Blueberry and Yogurt Smoothie**, Diced Pears, Salad, and Corn
- **Blueberry and Yogurt Smoothie** and Milk
- **Blueberry and Yogurt Smoothie** and Salad
- **Blueberry and Yogurt Smoothie** and Corn



- **Grape and Yogurt Smoothie**, Melon Cubes, Peanut Butter and Jelly Sandwich, Milk, Carrot and/or Celery Sticks
- **Grape and Yogurt Smoothie**, Melon Cubes, Milk, Carrot and/or Celery Sticks
- **Grape and Yogurt Smoothie**, Peanut Butter and Jelly Sandwich, Carrot and/or Celery Sticks
- **Grape and Yogurt Smoothie** and Peanut Butter and Jelly Sandwich
- **Grape and Yogurt Smoothie** and Milk
- **Grape and Yogurt Smoothie** and Carrot and/or Celery Sticks



Sample School Lunch Menu for Grades 9-12 (Offer Versus Serve)

Meal Component	Monday	Tuesday	Wednesday	Thursday	Friday
 <p>Milk¹</p>	<p>Choice of Milk (1 cup)</p>	<p>Choice of Milk (1 cup)</p>	<p>Choice of Milk (1 cup) or 20 fl oz Strawberry, Yogurt, and Milk Smoothie 1 cup Milk</p>	<p>Choice of Milk (1 cup)</p>	<p>Choice of Milk (1 cup)</p>
 <p>Grains</p>	<p>Pulled Pork Sandwich 1 WGR Hamburger Bun (2 oz eq)</p>	<p>Grilled Chicken Sandwich 1 WGR Hamburger Bun (2 oz eq)</p>	<p>Peanut Butter and Jelly Sandwich 2 slices of WGR Bread (2 oz eq)</p>	<p>Spaghetti and Meat Sauce² 1 cup Whole Wheat Spaghetti (2 oz eq)</p>	<p>Bean Burrito 1 Whole-Wheat Tortilla (2 oz eq)</p>
 <p>Meats and Meat Alternates</p>	<p>Pulled Pork Sandwich 3 oz Pulled Pork (3 oz eq)</p>	<p>8 fl oz Blueberry and Yogurt Smoothie ½ cup Greek Yogurt (1 oz eq) and Grilled Chicken Sandwich 1¼ oz Grilled Chicken Strips (1 oz eq)</p>	<p>20 fl oz Strawberry, Yogurt, and Milk Smoothie ½ cup Low-Fat Strawberry Yogurt (1 oz eq) and Peanut Butter and Jelly Sandwich 2 tablespoons Peanut (or Sunflower Seed) Butter (1 oz eq)</p>	<p>Spaghetti and Meat Sauce² 1 cup Meat Sauce (4 oz eq)</p>	<p>8 fl oz Peach and Yogurt Smoothie ½ cup Low-Fat Vanilla Yogurt (1 oz eq) and Bean Burrito ¼ cup Cheese (1 oz eq)</p>
 <p>Fruits</p>	<p>Dried Cranberries (¼ cup) and/or Melon (½ cup)</p>	<p>8 fl oz Blueberry and Yogurt Smoothie ½ cup Pureed Blueberries and/or Grapes (½ cup)</p>	<p>20 fl oz Strawberry, Yogurt, and Milk Smoothie 1 cup Pureed Strawberries and/or Apple Slices³ (½ cup)</p>	<p>Orange Wedges (½ cup) and/or Diced Pears (½ cup)</p>	<p>8 fl oz Peach and Yogurt Smoothie ½ cup Pureed Peaches and/or Mixed Berries (½ cup)</p>
 <p>Vegetables</p>	<p>Creamy Coleslaw² (½ cup other vegetable) and/or Baked Sweet Potato Fries (½ cup red/orange vegetable)</p>	<p>Carrot Sticks (½ cup red/orange vegetable) and/or Celery Sticks (½ cup other vegetable)</p>	<p>Salad with Romaine Lettuce, Cherry Tomatoes, and Cucumbers (½ cup dark green, ½ cup red/orange, and ¼ cup other vegetable) and/or Corn (½ cup starchy vegetable)</p>	<p>Spaghetti and Meat Sauce² 1 cup Meat Sauce (¾ cup red/orange vegetable) and/or Roasted Broccoli (½ cup dark green vegetable)</p>	<p>Bean Burrito ½ cup Black Beans (½ cup legumes) and/or Salsa (½ cup red/orange vegetable)</p>

WGR = Whole Grain-Rich

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¹A choice of low-fat and fat-free milks are offered.

²This item is from a USDA standardized recipe, which is available at the Institute for Child Nutrition's (ICN) Child Nutrition Recipe Box: <https://theicn.org/cnr/recipes-for-schools>. If using a commercially prepared product, document the meal pattern contribution with a CN label or PFS.

³The smoothie meets the full fruit requirement. The apple slices are provided as "extra" fruit.

A choice of milk types must be provided to students at breakfast and lunch. The milk in the 20 fl oz Strawberry, Yogurt, and Milk Smoothie may count toward one of the milk offerings, but you must also offer the choice of another type of milk.

The fruits in the smoothies count toward the weekly juice limit. In this weekly menu, 2 of the 5½ cups of fruits available for students to take at lunch are in the form of juice.

About the Sample Menu

Students must take at least a ½ cup of fruits and/or vegetables and the full minimum serving amount of two other meal components for a reimbursable lunch.

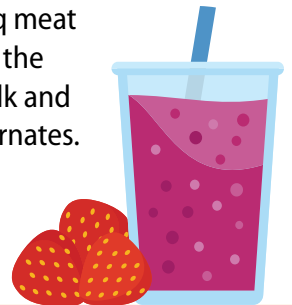
Smoothies on Tuesday and Friday

- The **Blueberry and Yogurt Smoothie** and **Peach and Yogurt Smoothie** both provide ½ cup fruits and 1 oz eq meat alternates. These smoothies provide less than the minimum required amount of meats/meat alternates (2 oz eq). See how a student could make a reimbursable lunch below.



Smoothie on Wednesday

- The **Strawberry, Yogurt, and Milk Smoothie** provides 1 cup milk and 1 cup fruits. This smoothie also provides 1 oz eq meat alternates. The smoothie provides the minimum required amount for milk and fruits, but not for meats/meat alternates. See how a student could make a reimbursable lunch below.



Examples of Reimbursable Lunches with Smoothies



- **Blueberry and Yogurt Smoothie**, Grapes, Grilled Chicken Sandwich, Milk, Carrot and/or Celery Sticks
- **Blueberry and Yogurt Smoothie**, Grilled Chicken Sandwich, Milk, Carrot and/or Celery Sticks
- **Blueberry and Yogurt Smoothie**, Grilled Chicken Sandwich, Carrot and/or Celery Sticks
- **Blueberry and Yogurt Smoothie**, Milk, Grapes, Carrot and/or Celery Sticks
- **Blueberry and Yogurt Smoothie** and Grilled Chicken Sandwich
- **Blueberry and Yogurt Smoothie**, Milk, Carrot and Celery Sticks



- **Strawberry, Yogurt, and Milk Smoothie**, Apple Slices, Peanut Butter and Jelly Sandwich, Salad and/or Corn
- **Strawberry, Yogurt, and Milk Smoothie**, Peanut Butter and Jelly Sandwich, Salad and/or Corn
- **Strawberry, Yogurt, and Milk Smoothie**, Apple Slices, and Peanut Butter and Jelly Sandwich
- **Strawberry, Yogurt, and Milk Smoothie** and Peanut Butter and Jelly Sandwich
- **Strawberry, Yogurt, and Milk Smoothie**, Salad and/or Corn



- **Peach and Yogurt Smoothie**, Mixed Berries, Bean Burrito, Milk, and Salsa
- **Peach and Yogurt Smoothie**, Bean Burrito, Milk, and Salsa
- **Peach and Yogurt Smoothie**, Bean Burrito, and Salsa
- **Peach and Yogurt Smoothie**, Bean Burrito, and Mixed Berries

How to Credit Ingredients in a Smoothie Recipe Prepared In-House

Smoothies can be prepared from scratch (i.e., "in-house") instead of using a commercial mix. It is important to standardize your smoothie recipe to make sure it produces the same amount of smoothie each time you make it. The standardization process can also help you determine how the smoothie credits towards meal pattern requirements. The information in this section applies to the standardizing and crediting of your recipe. Once you know how your smoothie recipe credits, you do not need to perform these steps each time you make the recipe.

When determining how your smoothie credits, you need to measure the fruits in the smoothie as a puree. Even if you use the USDA Recipe Analysis Workbook (RAW) to determine the meal pattern contribution for a standardized smoothie recipe, you must still enter the fruit as a fruit puree in the RAW to get an accurate crediting statement. The RAW can be found on the Food Buying Guide for Child Nutrition Programs (FBG) Interactive Web-based Tool at <https://foodbuyingguide.fns.usda.gov>.

The Food Buying Guide for Child Nutrition Programs (FBG) can help you:

- Convert gallons of milk to cups.
- Calculate cups of yogurt provided by multiple-sized containers.
- Determine the yield for the following frozen, unsweetened fruit purees: blackberries, guava, papaya, and raspberries.
- Determine the yield for the following fresh (unfrozen) vegetable purees: carrots, spinach, and butternut squash.
- Determine the yield for the following canned purees: applesauce, mashed banana, pumpkin, and mashed sweet potatoes.



Ingredient: Milk, low-fat or fat-free (unflavored or flavored)

- **May Credit Toward:** Milk Component
- **Minimal Creditable Amount:**
¼ cup per smoothie

To Calculate the Amount of Milk per Smoothie, Divide:

- The total amount of milk in the recipe by
- The total number of servings in the recipe.

Example

A standardized recipe that yields 100 smoothies uses 6.25 gallons of milk (ingredient).

1. Use the FBG to convert gallons of milk to cups of milk.
 - 6.25 gallons of milk x 16 cups per gallon = 100 cups of milk
2. Divide 100 cups of milk by 100 servings.
 - 100 cups ÷ 100 servings = 1 cup of milk per serving
 - Each smoothie contributes 1 cup (8 fl oz) to the milk component.



Using 1 cup of milk per serving in smoothie recipes allows the smoothie to meet the milk requirement for a school meal.



Ingredient: Yogurt, unflavored or flavored (Greek or regular) made from cow's milk or soy milk

- May Credit Toward: Meats/Meat Alternates Component
- Minimal Creditable Amount: 1 ounce ($\frac{1}{8}$ cup) of yogurt (0.25 oz eq meats/meat alternates) per smoothie

To Calculate the Amount of Yogurt per Smoothie, Divide:

- The total amount of yogurt in the recipe by
- The total number of servings in the recipe.

Example

A standardized recipe that yields 100 smoothies uses 12.5 containers of yogurt (ingredient). Each yogurt container weighs 32 ounces (oz).

1. Multiply the number of containers by the amount of yogurt in each container.
 - 12.5 yogurt containers x 32 oz per container = 400 oz of yogurt
2. Divide 400 oz of yogurt by 100 servings.
 - 400 oz \div 100 servings = 4 oz of yogurt per smoothie
3. Use the FBG to determine contribution to meats/meat alternates component.
 - 4 oz ($\frac{1}{2}$ cup) yogurt = 1 oz eq meats/meat alternates
 - Each smoothie contributes 1 oz eq to the meats/meat alternates component.



Smoothies that include $\frac{1}{2}$ cup of yogurt per serving provide 1 oz eq meat alternates.



Ingredient: Fruits, canned (in light syrup, juice, or water), frozen, fresh, or 100 percent full-strength juice

- May Credit Toward: Fruits Component
- Minimal Creditable Amount: $\frac{1}{8}$ cup

To Calculate the Amount of Fruit per Smoothie, Divide:

- The total amount of fruit juice/puree in the recipe by
- The total number of servings in the recipe.

Example

A standardized recipe that yields 100 smoothies uses 26 pounds (lb) 2 ounces (oz) of frozen raspberry puree.

1. Determine the total amount of frozen raspberry puree in your recipe, in pounds. To convert ounces to pounds, multiply the number of ounces by 0.0625.
 - $2 \text{ oz} \times 0.0625 = 0.125 \text{ lb}$
 - $26 \text{ lb} + 0.125 \text{ lb} = 26.125 \text{ lb}$ of frozen raspberry puree
2. Because raspberry puree is listed in the FBG, you can use it to calculate how many cups of thawed pureed raspberries are in 1 lb of frozen raspberry puree.
 - 1 lb of frozen raspberry puree = 7.69 servings of 0.25 cups thawed puree
 - $7.69 \text{ servings} \times 0.25 \text{ cups/serving of thawed puree} = 1.9225 \text{ cups of thawed puree}$
 - 1 lb of frozen raspberry puree = 1.9225 cups of thawed puree
3. Multiply the weight of the frozen raspberry puree in the recipe by 1.9225 cups to determine how many cups of thawed raspberry puree are in the recipe.
 - $26.125 \text{ lb} \times 1.9225 \text{ cups/lb} = 50.2253 \text{ cups of thawed raspberry puree}$
4. Divide 50.2253 cups of thawed raspberry puree by 100 servings.
 - $50.2253 \text{ cups} \div 100 \text{ servings} = 0.5022 \text{ cups of thawed raspberry puree per serving}$
5. Each smoothie contributes $\frac{1}{2}$ cup of thawed raspberry puree (credited as juice) to the fruits component.



If your fruit ingredient is a concentrated fruit juice or frozen concentrated fruit puree, then:

- Thaw the concentrated fruit juice or fruit puree, if frozen.
- Reconstitute it to 100 percent full-strength before measuring the volume in the recipe.
- Check the FBG to see if crediting information for your pureed fruit or juice is available. If not, measure the amount of puree or full-strength juice in fluid ounces.
- Divide the amount of juice/puree in the recipe by the number of servings. This tells you how much fruit juice/puree is in one smoothie.



If your fruit ingredient is whole or cut fruit, then:

- You must puree the fruit before measuring the amount in your recipe:
 - **Canned fruits:** You may puree the fruit and liquid or puree the drained fruit.
 - **Frozen fruits:** Thaw frozen fruits before pureeing.
- Measure the amount of puree in fluid ounces.
- Divide the amount of puree in the recipe by the number of servings. This tells you how much fruit is in one smoothie.
- If you use mixed fruits (such as mixed berries), you do not need to separate the fruits before pureeing. You can puree the mixed fruits together and measure the volume of the mixed fruit puree.

Applesauce is a puree.

If you are using concentrated juice, once you have determined the crediting information for your smoothie, you can add the concentrated juice and the amount of water or ice needed to reconstitute it to 100 percent juice directly in the blender. Remember, only concentrated juice that is reconstituted to 100 percent full-strength juice is creditable in school meals.



Ingredient: Vegetables, canned (drained), frozen, fresh, or 100 percent full-strength juice

- May Credit Toward: Vegetables Component
- Minimal Creditable Amount: $\frac{1}{8}$ cup

To Calculate the Amount of Vegetables per Smoothie, Divide:

- The total amount of vegetable juice/puree in the recipe by
- The total number of servings in the recipe.

Example

A standardized recipe that yields 100 smoothies uses 14 lb 5 oz of carrot puree.

1. Find the total amount of carrot puree in the recipe, in pounds. To convert ounces to pounds, multiply the number of ounces by 0.0625.
 - 5 oz x 0.0625 = 0.3125 lb
 - 14 lb + 0.3125 lb = 14.3125 lb of carrot puree
2. Because carrot puree is listed in the FBG, you can use the FBG to determine how many cups of carrot puree are in 1 pound of carrot puree.
 - 1 lb of carrot puree = 1.75 cups of carrot puree
3. Multiply the weight of the carrot puree by 1.75 cups to determine how many cups of carrot puree are in the recipe.
 - 14.3125 lb x 1.75 cups/lb = 25.0468 cups of carrot puree
4. Divide 25.0468 cups of carrot puree by 100 servings.
 - 25.0468 cups \div 100 servings = 0.2504 cups of carrot puree per serving
5. Each smoothie contributes $\frac{1}{4}$ cup of carrot puree (credited as juice) to the vegetables component.



If your vegetable ingredient is purchased as concentrated vegetable juice or frozen concentrated vegetable puree, then:

- Thaw the concentrated vegetable juice or puree, if frozen.
- Reconstitute the concentrated puree or juice to 100 percent full-strength before measuring the volume in the recipe.
- Check the FBG to see if crediting information for your pureed vegetable or juice is available. If not, measure the amount of puree or full-strength juice in fluid ounces.
- Divide the amount of juice/puree in the recipe by the number of servings. This tells you how much vegetable juice/puree is in one smoothie.



If your vegetable ingredient is whole or cut up, then:

- You must puree the vegetable before measuring the amount in your recipe:
 - **Canned vegetables:** You may puree the drained vegetable.
 - **Frozen vegetables:** Thaw frozen vegetables before pureeing.
- Measure the amount of puree in fluid ounces.
- Divide the amount of puree in the recipe by the number of servings. This tells you how much vegetables are in one smoothie.
- If the smoothie will be served at lunch and contains vegetables, record the total volume for each vegetable subgroup as well.

Canned pumpkin and canned mashed sweet potatoes are both purees.

More About Vegetables

- If there is no manufacturer documentation of amounts of each vegetable in a 100% vegetable juice blend, then the entire vegetable blend may credit as juice toward the additional vegetable subgroup.
- If all of the vegetables in the 100% vegetable juice blend belong to the same vegetable subgroup, then the vegetable blend may credit as juice towards that subgroup. For example, a 100% vegetable juice blend made from carrots and sweet potatoes may credit as juice toward the red/orange vegetable subgroup.
- If the 100% vegetable juice blend contains more than one vegetable subgroup, then the entire vegetable blend may credit as juice toward the additional vegetable subgroup.

Other Ingredients in Smoothies

Some smoothies may include ingredients besides milk, yogurt, fruits, and vegetables. The ingredients below are not creditable when added to smoothies. These items would be considered an extra or additional food and count toward weekly dietary specifications for calories, saturated fat, and sodium.

- Grains (for example, oats)
- Nuts, seeds, and nut and seed butters
- Tofu



If a smoothie contains herbal supplements or protein powder,

none of the ingredients in the smoothie can credit toward a reimbursable meal.



Commercially-Prepared Smoothies

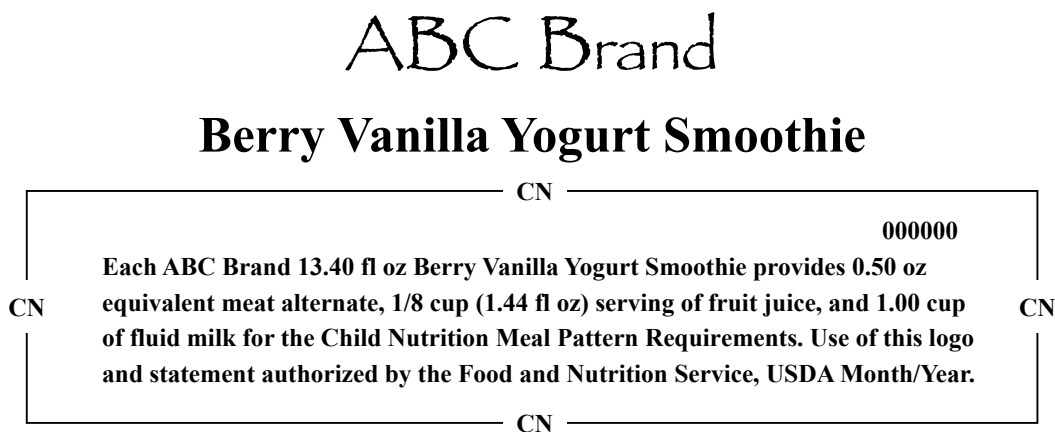
You may offer commercially-prepared smoothies or smoothies made from a pre-packaged kit or commercial mix. Refer to the CN label or review the PFS to confirm what meal component(s) the smoothie can credit toward, and in what amount(s).

Commercially-Prepared Smoothies Made with Fruits and/or Vegetables

Commercially-prepared smoothie mixes that use concentrated juice or concentrated puree must have water (or the appropriate amount of ice) added according to the instructions to bring the juice to full-strength.

A PFS or CN label is needed to document the meal pattern contribution of commercial smoothies that do not include the percent juice content claim (required by the U.S. Food and Drug Administration) listed as 100 percent juice.

CN labels for commercial smoothies: A CN label may be available for commercial smoothies that include yogurt. Only products that contribute at least 0.50 oz eq meats/meat alternates per serving are eligible for a CN label. This label will indicate how the smoothie credits toward the reimbursable meal. See the example below:



Product Formulation Statements (PFS) for Commercial Smoothies

You may request a PFS from the manufacturer of a commercial smoothie. Check to ensure the PFS demonstrates how the smoothie credits toward a reimbursable meal.

For more information on what to look for on a PFS, go to <https://fns.usda.gov/sites/default/files/resource-files/manufacturerPFSstipsheet.pdf>.



Product Label

ABC Brand – Berry Vanilla Yogurt Smoothie

List of ingredients: Vanilla Nonfat Yogurt (Cultured Pasteurized Nonfat Milk, Sugar, Whey Protein Concentrate, Natural Flavors, Pectin), Skim Milk, Blackberry Puree.

Sample Product Formulation Statement (PFS)

Product Formulation Statement For Child Nutrition Programs

Product Name: ABC Brand – Berry Vanilla Yogurt Smoothie

Product Code: 1234

Serving Size: 13.4 fl oz

Date: 1/27/2021

Meat Alternate

Description of Creditable Ingredients per FBG	Ounces per RAW Portion of Creditable Ingredient (A)	FBG Yield (B)	Purchase Unit (C)	Creditable Amount (A x B / C)
Yogurt, fat-free, flavored*	(0.25 cup) 2.00 oz	8.00	32.00 oz	0.50 oz
Total Meat Alternates Creditable Amount:				0.50 oz

*The yogurt in this product meets the Standard of Identify for yogurt as stated in 21 CFR131.200.

Milk

Description of Creditable Ingredients per FBG	Fluid Ounces per RAW Portion of Creditable Ingredient (A)	FBG Yield (B)	Purchase Unit (C)	Creditable Amount (cup(s))(A x B / C)
Milk, fluid, fat-free*	8.00 fl oz	16.00	128.00 fl oz	1.0 cup
Total Milk Creditable Amount:				1.0 cup milk

*The milk in this product meets the requirements at 7 CFR 210.10(d)(1) for types of fluid milk.

Fruit

Description of Creditable Ingredients per FBG	Fluid Ounces per RAW Portion of Creditable Ingredient (A)	FBG Yield (B)	Purchase Unit (C)	Creditable Amount (A x B / C)
Blackberries (Boysenberries), Frozen, Unsweetened, Puree	1.4 fl oz (thawed)	1	1	1.4 fl oz
Total Fruit Creditable Amount:				1/8 cup juice

Shows volumes of fruit puree was determined when the product was not frozen.

Meal Pattern Contribution Statement

I certify that the above information is true and correct and that a 13.4 fl oz serving of the above product (ready for serving) provides 0.5 ounces of equivalent meat/meat alternate, 1.0 cup of milk, and 1/8 cup of fruit juice when prepared according to directions.

John Doe

Signature

John Doe

Printed Name

XX-XX-XXXX





Date

VP, 555-555-5555

Title and Phone Number

Product Formulation Statement (PFS) Checklist

Verify that the smoothie is creditable and that the PFS contains all required information using the checklist below.

Ingredient	Required	Yes
 <p>Smoothies that contain yogurt</p>	<p>PFS states that the yogurt used in the smoothie meets the Standard of Identity for yogurt as stated in 21 CFR 131.200.</p> <p>Each smoothie contains enough yogurt to credit at least 0.25 oz eq of meat alternate.</p>	
 <p>Smoothies that contain milk</p>	<p>PFS states that the milk used in the smoothie meets the Standard of Identity for milk as stated in 7 CFR 210.10(d)(1) for types of fluid milk. Milk is fat-free or low-fat.</p> <p>Each smoothie contains enough milk to credit at least ¼ cup of milk.</p>	
 <p>Smoothies that contain fruits and/or vegetables</p>	<p>PFS uses the pureed or juice form of the fruit or vegetable in determining the creditable amount.</p> <p>Volumes of fruit and vegetable purees were determined before freezing or after thawing.</p> <p>If juice concentrate was used, enough water was added to reconstitute to 100 percent full-strength juice.</p> <p>Each smoothie contains enough fruit or vegetable to credit at least ⅛ cup of fruits and/or vegetables.</p>	
 <p>Smoothies that contain herbal supplements or protein powder</p>	<p>The smoothie is not creditable.</p>	

Tips for Reducing Added Sugars in Smoothies

- Use milk and yogurts that are lower in added sugars.
- Limit the use of sweeteners, such as sugar, honey, and syrups in smoothies.
- Compare commercial smoothie options and choose ones that are lower in added sugars.

Tools for Success



Commercial Grade Blenders

Some schools choose to use a blender or vertical cutter mixer to make custom smoothies for students or make smoothies outside of the school kitchen. Many kitchen equipment brands offer a professional line or commercial-grade blenders. These blenders have larger containers (pitchers) than non-commercial blenders. Depending on the number of smoothies you need to blend, your operation may need a larger commercial-grade blender. Using the larger blender may help you save time by making more smoothies per batch.



Commercial Smoothie Machines

There are machines that use commercial mixes to make smoothies in large quantities. Some schools rent the machines while other schools get the machines for free with their vendor agreements.



Immersion Blenders

Some schools make large batches of smoothies using 5- or 6-gallon buckets on a low table with a large, commercial immersion blender. There are immersion blenders that are specifically made for high-volume and high-use, such as in school kitchens. Staff training can help ensure the texture and yields of smoothies are consistent.



Post signs that highlight the meal components of the smoothie wherever the smoothies are offered, such as "Fruit and Milk Smoothie." Check with your State agency on requirements for identifying meal components.

Serving Up Success

Scratch-Made for Early Risers



Orono Public Schools in **Minnesota** let secondary school students create customized smoothies. The students take a cup that is pre-filled with 8 fl oz milk and 4 oz vanilla yogurt and then choose fruits and

vegetables from a food bar. Signs provide instruction on how to add 1 cup of fruits and/or vegetables to their smoothie. A cafeteria staff member then uses a small, single serving blender to mix the smoothie in the cup.



Georgia's Treutlen County Schools feature kale from their school garden in their green smoothies once a week. Staff prepares and freezes the smoothies early in the morning and serves them from a hall cart to

approximately 175 students. To keep meal planning simple, each smoothie contains a cup of milk.

Participation in breakfast increases on days when smoothies are offered at **New Castle Community Schools** in **Indiana**. As a cost-savings approach, the school nutrition staff uses frozen and canned fruits from USDA Foods as much as possible. They found that draining and freezing their canned peaches works well in the smoothies.

The staff from the elementary schools in **East Hartford Public Schools** in **Connecticut** like using frozen fruits too. They use a frozen four-berry mix (blackberry, strawberry, blueberry, and raspberry) in their *Very Berry Smoothie*, which is a student favorite.

Smoothies in the Classroom



Georgia's Burke County Public Schools offer breakfast smoothies, prepared from commercial mixes, to elementary students in the classroom. The staff pours the commercial mix of

100 percent juice into the smoothie machine the night before so it can freeze. In the morning, they add yogurt to the machine prior to mixing. The smoothies are dispensed into plastic cups with lids and placed in buckets with ice. Staff delivers the iced buckets of pre-portioned smoothies to the classrooms before the students arrive. They also deliver buckets of milk cartons, pre-packaged grains, and fruit for a reimbursable meal. The older elementary students love to distribute the food to their peers while teachers place the food on younger elementary students' desks.

Commercially-Prepared for Fast Meal Service

In **Los Nietos School District** in **California**, staff use commercial equipment to serve smoothies during warm weather months. They make about 100 smoothies the night before, freeze them overnight, and then thaw them in a cooler before serving.



Share Your Smoothie Recipes!

Have a great smoothie recipe? State agencies can submit standardized recipes by emailing them to TeamNutrition@USDA.gov. Recipes will be considered for publication on the Institute for Child Nutrition's Child Nutrition Recipe Box, available at <https://theicn.org/cnr/recipes-for-schools>.



Peach and Yogurt Smoothie

Yield: 50 Smoothies and 100 Smoothies

Serving size: 8 fl oz

Crediting: ½ cup fruit juice and 1 oz eq meat alternates

Ingredients	50 Servings	100 Servings
Peaches, frozen, no sugar added	3 gallons 3 quarts 2½ cups	7 gallons 3 quarts 1 cup
Vanilla yogurt, low-fat	1 gallon 2 quarts 1 cup	3 gallons 2 cups

Ingredients	50 servings		100 Servings		Directions for 50 Servings	Directions for 100 Servings
	Weight lbs + oz	Measure largest unit	Weight lbs + oz	Measure largest unit		
Peaches, frozen, no sugar added	13 lb 14 oz	3 gal 3 qt 2½ cups	27 lb 12 oz	7 gal 3 qt 1 cup	1. Place frozen peaches in a 4" steam table pan and cover. Place in the refrigerator for 20-24 hours to thaw. CCP: Hold at 41 °F or lower. Note: Peaches must be free of ice crystals for best smoothie consistency. 2. Measure 8½ cups of thawed peaches and place in a 1 gallon blender. This will prepare 12 smoothies at a time.	1. Place frozen peaches in a 4" steam table pan and cover. Each pan should contain 13 lb 14 oz of frozen peaches. Place in the refrigerator for 20-24 hours to thaw. CCP: Hold at 41 °F or lower. Note: Peaches must be free of ice crystals for best smoothie consistency. Peaches thaw best with no more than 15 lb per 4" steam table pan. 2. Measure 8½ cups of thawed peaches and place in a 1 gallon blender. This will prepare 12 smoothies at a time.
Vanilla yogurt, low-fat	12 lb 8 oz	1 gal 2 qt 1 cup	25 lb	3 gal 2 cups		
					3. Add 1 qt 2 cups of yogurt to the blender. Blend for about 4-5 minutes or until peaches are pureed and ingredients are fully blended. 4. Pour 1 cup (8 fl oz) smoothie into each 9 oz clear plastic cup. Place on full-sized sheet pans and store in the refrigerator until served. CCP: Hold at 41 °F or lower. 5. Repeat steps 2-4 until you reach a total of 50 servings.	3. Add 1 qt 2 cups of yogurt to the blender. Blend for about 4-5 minutes or until peaches are pureed and ingredients are fully blended. 4. Pour 1 cup (8 fl oz) of smoothie into 9 oz clear plastic cups. Place cups on full-sized sheet pans and store in the refrigerator until served. CCP: Hold at 41 °F or lower. 5. Repeat steps 2-4 until you reach a total of 100 servings.

Final Weights and Yields

Weight: 25 lb

Weight: 50 lb

Yield: 50 Peach smoothies

Yield: 100 Peach smoothies

Serving	Weight	Volume
NSLP/SBP Crediting Information	50 Servings: 25 pounds	50 Servings: 3 gallons 2 cups
	100 Servings: 50 pounds	100 Servings: 6 gallons 1 quart

Recipe notes: This is a no-cook recipe. Each batch of 12 servings needs 3 quarts 3 cups of frozen peaches. The peaches thaw to 8½ cups and puree down to 6 cups.

Storage: 12 smoothies fit on one half sheet pan. Twenty-four smoothies fit on one full-sized sheet pan. Half sheet pans will weigh less and are easier to balance.

Nutrition Information

8 fl oz Peach and Yogurt Smoothie

Nutrients	Amount
Calories	157
Total Fat	1.5 g
Saturated Fat	1 g
Cholesterol	6 mg
Sodium	75 mg
Total Carbohydrate	32 g
Dietary Fiber	2 g
Total Sugars	30 g
Added Sugars included	N/A
Protein	7 g
Vitamin D	N/A
Calcium	194 mg
Iron	0.4 mg
Potassium	N/A

N/A = Data not available

Try It Out

Use the information in this training guide to answer the questions below.

1

Which smoothie ingredient(s) do not credit toward a reimbursable school meal? Choose all that apply.

- A. Seed and nut butters
- B. Oats
- C. Yogurt
- D. Protein powder
- E. Herbal supplements
- F. All of the above

2

As part of a reimbursable lunch, Agriculture High School wants to offer ½ cup of 100 percent apple juice and a smoothie made with ½ cup of fruit puree to meet the fruits component each day of the week. Is this allowed? Why or why not?

3

Nourishing High School wants to purchase a commercially-prepared yogurt beverage that is labeled as a “smoothie.” This item does not have a PFS or CN label. Can this smoothie be counted toward a reimbursable breakfast or lunch?

1. A, B, D, and E: Seed and nut butters (a) and oats (b) added to smoothies may not credit toward a reimbursable meal. The other ingredients in the smoothie (such as milk, yogurt, fruits, or vegetables) may still credit toward a reimbursable meal. However, if protein powder (d) or herbal supplements (e) are added to a smoothie, none of the ingredients in the smoothie will be creditable. See page 12 for details.
2. No, this is not allowed. Juice may only be offered to meet up to half of the fruits requirement for the week. Because fruits in smoothies credit as juice, offering 100 percent apple juice and a fruit smoothie every day would mean juice is being offered to meet the entire fruits requirement for the week.
3. No, this item may not credit toward a reimbursable school meal. Any beverage not labeled as “contains 100% Juice,” “fat-free milk,” or “low-fat milk” needs documentation that demonstrates how the product contributes to Federal meal requirements. Commercially-prepared smoothies with yogurt or milk must have a PFS or CN label to demonstrate how ingredients can be credited in a school breakfast or lunch. See policy memo, Smoothies Offered in Child Nutrition Programs at <https://www.fns.usda.gov/cn/smoothies-offered-child-nutrition-programs> for more information.

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