

## More Information on the Nutrient Analysis

**Using the nutrient analysis, you can see at a glance what an individual serving of each recipe provides in terms of the following 12 nutrients:**

Calories  
Protein  
Carbohydrate  
Total fat  
Saturated fat  
Cholesterol  
Vitamin A  
Vitamin C  
Iron  
Calcium  
Sodium  
Dietary fiber

**This information can help you plan balanced, nutritious meals. For example, if you decide to serve Chicken Stir-Fry (D-39):**

- You may wish to select an item higher in iron to serve as a second choice since one serving of the Stir-Fry contains only 1.26 mg of iron.
- And, since the vitamin A content of the Chicken Stir-Fry (D-39) is high, you may decide to offer a fruit dish that is high in vitamin C for dessert.

**The nutrient analysis was done by computer, using:**

- a USDA approved nutrient analysis software program
- the National Nutrient Data Base for Child Nutrition Programs, version 8
- the Agricultural Research Service's Nutrient Standard Release Database, release 16

**Here is some additional information on the nutrient analysis that may be helpful as you work with the recipes:**

- Each recipe was analyzed for its nutritive value using **primary ingredients only**. Alternate and optional ingredients were not included.
- The type and quantity of each primary ingredient was entered into the nutrient analysis software program based on the **market form** or purchase state given in the recipe — for example, fresh, frozen, or canned.
- Adjustments for yield, nutrient retention, and moisture/fat changes were also calculated using the yield factor method. As a result, the final nutrient analysis of the recipe reflects the final “cooked or prepared” product.

To illustrate this process, let us look at some of the steps involved in doing the nutrient analysis using yield factor method for the Chicken Stir-Fry (D-39) recipe, using carrots as an example. Yield factor method uses the nutrient profile of food “as consumed” and the yield from the *Food Buying Guide*.

The recipe calls for “fresh carrots” as a primary ingredient but the carrots are consumed in the cooked form. The food code selected from the USDA approved nutrient analysis software program — and entered into the computer — was “Carrots, cooked.”

The quantity of “cooked carrots” was entered based on the yield of cooked carrots from the amount of “fresh carrots” based on the *Food Buying Guide*.

Finally, for some recipes, any moisture and/or fat loss (or gain) that would occur during cooking was entered to calculate the final recipe weight and nutrient analysis.

# Tips on Modifying and Standardizing Recipes

Fat can be reduced in many recipes without losing flavor.

**As you work with these recipes, you will find that many have reduced levels of fat compared to the traditional version of the recipe. This is one important way the recipes are consistent with the Dietary Guidelines. The recipes successfully minimize fat without losing flavor because of careful attention given to both:**

- ingredients, and
- cooking techniques

**In developing and testing the recipes, USDA made sure that many ingredients were purchased in a lowfat form, provided the overall quality of the product was not affected. For example:**

- All raw meat ingredients were specified to be lowfat. The ground beef, for instance, had no more than 20 percent fat. Where possible, it was cooked prior to adding it to the product so the fat could be drained.
- Chicken was either purchased skinless or the skin was removed prior to cooking.
- Mayonnaise and dairy products, such as milk, yogurt, and cheese, were purchased in the lowfat form provided this did not lessen the final quality.

**In addition, main entrees were prepared with a minimal amount of fat. For example:**

- No products were fried.
- All sautéed items were prepared with a small amount of oil.

**Baked goods were also specially prepared. For example:**

- The amount of margarine or butter was reduced by substituting lowfat yogurt and applesauce for a percentage of the fat.
- Whole eggs were replaced with egg whites.
- Baking pans were either ungreased or lightly sprayed with pan release spray.

You can use these same techniques to reduce fat without losing flavor in the recipes you already have.

**Some Tips on Modifying and Standardizing Recipes:**

**Any** recipe can be modified to reflect new tastes or changing needs. The recipes in this collection may give you ideas for modifying the recipes you are already using — for example, by adding or substituting new ingredients or changing your cooking techniques.

As you make changes, it is important to modify first, then standardize.

**Standardized recipes have many advantages:**

They have been tried, adapted, and retried several times for use by a given foodservice operation and have been found to produce the same good results and yield every time when the exact procedures are used with the same type of equipment and the same quantity and quality of ingredients.

**Using a standardized recipe ensures that:**

- The same amount of product is produced each time.
- The same portion size is provided each time.

**Menu planning can be more consistent because:**

- There is a predictable yield.
- Costs are easier to control.
- Inventory is easier to control.

**In addition, when the same good results can be produced time after time:**

- Foodservice workers have more confidence in what they are doing and need less supervision, and
- Managers can be sure the nutrient analysis of a recipe will be accurate as long as ingredients and preparation methods remain the same.

## Tips on Modifying and Standardizing Recipes

continued

When you decide to modify a recipe, start by making 25 portions. In addition:

- Change **only one ingredient** at a time. Keep other ingredients the same as in the original recipe.
- Record clear descriptions of foods substituted in exact amounts.
- If increasing or decreasing an ingredient, do so in increments of 1/4 to 1/2 of the amount called for in the original recipe.
- Follow preparation instructions closely and record any changes you may make.
- Do not make further changes or a larger size recipe until the first modification has produced a high-quality product.

Once you have successfully prepared 25 portions of a recipe you are modifying:

- Set up taste panels to evaluate the product for appearance, consistency, texture, flavor, and overall acceptability.
- Reproduce at 50 and 100 servings before increasing the recipe to the number needed for your meal service.
- Instruct foodservice personnel about how and why recipes have been modified.

It is important to also:

- Weigh the total volume of recipes at 50 and 100 servings and record the weight.
- Weigh each serving and record the weight.

The weight of the total recipe and the weight of each serving are important for nutrient analysis.



## Weights and Measures Equivalencies

3 teaspoons	=	1 tablespoon	=	(1/2 fluid ounce)
2 tablespoons	=	1/8 cup	=	(1 fluid ounce)
4 tablespoons	=	1/4 cup	=	(2 fluid ounces)
5 1/3 tablespoons	=	1/3 cup	=	(2 2/3 fluid ounces)
8 tablespoons	=	1/2 cup	=	(4 fluid ounces)
10 2/3 tablespoons	=	2/3 cup	=	(5 1/3 fluid ounces)
12 tablespoons	=	3/4 cup	=	(6 fluid ounces)
14 tablespoons	=	7/8 cup	=	(7 fluid ounces)
16 tablespoons	=	1 cup	=	(8 fluid ounces)
2 cups	=	1 pint	=	(16 fluid ounces)
2 pints	=	1 quart	=	(32 fluid ounces)
4 quarts	=	1 gallon	=	(128 fluid ounces)
1 gram	=	0.035 ounces		
1 ounce	=	28.35 grams		
16 ounces	=	1 pound		
1 pound	=	454 grams		
1 kilogram	=	2.21 pounds		

# Metric Tables

## Metric Conversion Table

To change	To	Multiply by
ounces (oz)	grams (g)	28.35
pounds (lb)	kilograms (kg)	0.45
teaspoons (tsp)	milliliters (ml)	4.93
tablespoons (Tbsp)	milliliters (ml)	14.79
fluid ounces (fl oz)	milliliters (ml)	29.58
cups (c)	liters (l)	0.24
pints (pt)	liters (l)	0.47
quarts (qt)	liters (l)	0.946
gallons (gal)	liters (l)	3.8

## Metric Equivalents by Weight

Customary Unit (avoirdupois)	Metric Unit
<b>Ounces (oz)</b>	<b>Grams (g)</b>
1 oz	28.35 g
4 oz	113.4 g
8 oz	226.8 g
16 oz	453.6 g
<b>Pounds (lb)</b>	<b>Grams (g)</b>
1 lb	453.6 g
2 lb	907.2 g
<b>Pounds (lb)</b>	<b>Kilograms (kg)</b>
2.2 lb	1 kg (1000 g)

## Metric Equivalents by Volume

Customary Unit (fluid ounces)	Metric Unit
1 cup (8 fl oz)	236.59 milliliters (mL)
1 quart (32 fl oz)	946.36 milliliters (mL)
1.5 quarts (48 fl oz)	1.42 liter (L)
33.818 fl oz	1.0 liter (L)

# Basic Cuts and Shapes

**Small Dice:**

1/4-inch cube.



**Medium dice:**

1/2-inch cube.



**Large dice:**

3/4-inch cube.



**Julienne:**

1/4-inch square by 1 to 2 inches long



**French Fry:**

1/4-to 1/2-inch x 3 to 4 inches and longer.



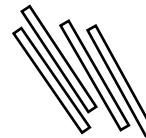
**Mince:**

To chop into very fine pieces.



**Shred:**

To cut into thin strips by using a grater or chef's knife.



**Chop:**

To cut pieces of roughly the same size.



# Decimal Equivalents for Fractions (of 1 Pound, 1 Cup, or 1 Gallon)

To use the table, read whole units at the left side and the fraction or part of the unit at the top of the table. If the units are ounces, the decimal equivalents in the table are parts of 1 pound. If the units are tablespoons, the decimal equivalents are part of 1 cup. If the units are cups, the decimal equivalents are part of 1 gallon.

**Examples:**

**Ounces to pounds:** To convert 10 1/2 ounces to the corresponding decimal equivalent of a pound, find 10 in the first column on the left. Next, follow right on the same horizontal line to the column headed “+ 1/2 unit,” which shows that 10 1/2 ounces is equal to 0.66 pound.

**Pounds to ounces:** To convert 0.53 pound to ounces, find 0.53 in the body of the table. Follow left on the same horizontal line to the whole number, i.e., 8. Next, read the fraction of an ounce from the top number of the column in which 0.53 was found, i.e., 1/2. Thus, 0.53 pound equals 8-1/2 ounces.

**Whole** units are on the left. The fraction or part of the unit is to the right.

If the whole units are:      the decimal equivalents are part of:

- ounces ..... 1 pound
- tablespoons ..... 1 cup
- cups ..... 1 gallon

**FRACTION OR PART OF THE UNIT**

NUMBER OF UNITS	Unit	+ 1/4 of unit	+ 1/3 of unit	+ 1/2 of unit	+ 2/3 of unit	+ 3/4 of unit
0	-----	0.02	0.02	0.03	0.04	0.05
1	0.06	.08	.08	.09	.10	.11
2	.12	.14	.15	.16	.17	.17
3	.19	.20	.21	.22	.23	.23
4	.25	.27	.27	.28	.29	.30
5	.31	.33	.33	.34	.35	.36
6	.38	.39	.40	.41	.42	.42
7	.44	.45	.46	.47	.48	.48
8	.50	.52	.52	.53	.54	.55
9	.56	.58	.58	.59	.60	.61
10	.62	.64	.65	.66	.67	.67
11	.69	.70	.71	.72	.73	.73
12	.75	.77	.77	.78	.79	.80
13	.81	.83	.83	.84	.85	.86
14	.88	.89	.90	.91	.92	.92
15	.94	.95	.96	.97	.98	.98
16	1.00	1.02	1.02	1.03	1.04	1.05

# Handle and Store Food Properly

Food handling, sanitation, and safety in school foodservice are regulated by State, county, and city health department codes. Become familiar with the regulations to prevent foodborne illness.

Be aware of the condition in which perishable foods are delivered. Be sure frozen foods are frozen solid and refrigerated foods feel cold. Certain factors can shorten a food's shelf life, such as too much handling or improper temperature control before delivery.

Date incoming food items to help rotate stock properly. Placing oldest food out front will encourage the use of foods on a "first-in, first-out" basis.

## Maintain Strict Cleanliness

**Employee** – Practice good personal hygiene. Adequately restrain hair. Wash hands frequently and properly with soap and water. Use a separate sink for washing hands. Cough or sneeze into disposable tissues only and wash hands afterwards. Do not sneeze or cough on food or food production surfaces. No one with an infected cut or skin infection should be permitted to work with food.

**Equipment and Facility** – Keep equipment and facilities clean and sanitized. Use utensils to pick up and handle food. If using hands, wear disposable plastic gloves and throw the gloves away after use. Keep cutting boards, can openers, grinders, slicers, and work surfaces very clean. Sanitize equipment and work surfaces between use with raw and cooked foods. Check with local health department codes for a list of sanitizing agents. Bacteria can "loiter" in towels and cloths. Discard disposable towels after use. Launder fabric towels frequently with sanitizing agents.

## Keep Hot Foods Above 135 °F

Bacteria grow rapidly between 41 °F and 135 °F (including room temperature). Avoid holding foods in this temperature zone. If the serving of a hot food must be delayed, keep it at a holding temperature of 135 °F or above. Although steamtables are designed to maintain holding temperatures, do not hold a food on a steamtable for more than **2 hours**.

**Follow directions** – Follow the directions on the food labels to ensure that proper cooking methods, time, and temperature are used. Also, refer to recipes for specific cooking instructions.

**Cook thoroughly** – Cook meat and poultry to the doneness temperature and time recommended by the label or recipe. To make sure that meat and poultry are cooked all the way through, use a meat thermometer.

**Cook completely** – Cook meat and poultry completely at one time. Partial cooking may encourage bacteria to grow before cooking is completed.

## Keep Cold Foods Below 41 °F or Below

Check refrigerators and freezers frequently with an appliance thermometer. The refrigerator should register 41 °F or below. The freezer should read 0 °F or lower. Keep a daily log of temperature readings.

**Refrigerator** – Since repeated handling can introduce bacteria into meat and poultry, prepackaged meat and poultry should remain in the original wrapping. When not prepackaged, meat should be loosely wrapped.



## Handle and Store Food Properly

continued

**Freezing** – While “freezer burn” will not cause illness, it does make certain food tough and tasteless. To avoid “freezer burn” wrap freezer items in heavy freezer paper. Place new items to the rear of the freezer, and older items to the front. Label and date freezer packages to keep stock properly rotated.



**Thawing** – Thaw frozen meat, poultry, and fish in the refrigerator until pliable (easy to separate). Do not thaw foods at room temperature.

### **Wash Fresh Fruits and Vegetables**

Thoroughly wash all fresh fruits and vegetables with cold running water. Since many fresh fruits and vegetables are served without being cooked, thorough cleaning is critical in preventing foodborne illness.



# Cooking Terms and Abbreviations

## Terms Used to Describe Oven Temperatures

	Between
<b>Very slow oven</b>	250 °F and 275 °F
<b>Slow oven</b>	300 °F and 325 °F
<b>Moderate oven</b>	350 °F and 375 °F
<b>Hot oven</b>	400 °F and 425 °F
<b>Very hot oven</b>	450 °F and 475 °F
<b>Extremely hot oven</b>	500 °F and 525 °F

Abbreviations	
<b>tsp</b>	teaspoon
<b>Tbsp</b>	tablespoon
<b>oz</b>	ounce
<b>fl oz</b>	fluid ounce
<b>lb or #</b>	pound
<b>c</b>	cup
<b>pt</b>	pint
<b>qt</b>	quart
<b>gal</b>	gallon
<b>wt</b>	weight
<b>No.</b>	number
<b>pkg</b>	package
<b>°F</b>	degree Fahrenheit
<b>°C</b>	degree Celsius
<b>x</b>	multiply
<b>÷</b>	divide



## Glossary of Terms for Processes and Methods

**Bake** – to cook by dry heat, usually in an oven. A suitable cooking method for meat, bread, and many other foods.

**Barbecue** – to roast or broil a food that is usually brushed with a highly seasoned sauce.

**Baste** – to spoon liquids, sauce, or meat juice over a food to keep it moist during cooking and to add flavor.

**Beat** – to vigorously mix by hand or with mixing equipment to make the mixture light, fluffy, or smooth.

**Boil** – to cook rapidly in water or liquid so that bubbles rise and break on the surface.

**Braise** – to cook slowly in a covered container with a small amount of liquid or water. A suitable cooking method for less tender meat cuts.

**Bread** – to coat food with bread crumbs, cracker crumbs, or flour before cooking.

**Broil** – to cook by direct heat from a flame, electric unit, or glowing coals; a suitable cooking method for tender meat cuts.

**Brown** – to cook food, generally meat, until it is uniformly brown on all sides.

**Chill** – to cool a food with ice water or refrigeration.

**Chop** – to cut food into small equal pieces with a knife or chopping equipment.

**Combine** – to mix two or more ingredients together.

**Cream** – to work foods (such as shortening and sugar) together with a spoon or mixer, until soft and fluffy or until thoroughly blended.

**Cut in** – to mix solid fat, such as butter or margarine, into dry ingredients with a cutting motion so that the fat remains in small particles.

**Dice** – to cut into small cubes with a knife or chopping equipment.

**Dredge** – to coat food by dipping in crumbs, flour, cornmeal, sugar, or other coatings.

**Fold** – to combine several food ingredients into a mixture by gently turning the mixture, with a minimum of motions, until the ingredients are blended.

**Fry** – to cook in fat over heat in a skillet, pan, or griddle, or in a fryer.

**Glaze** – to coat with a mixture to produce a glossy appearance on the food.

**Grill** – to cook uncovered over direct heat on a griddle or pan, removing fat as it accumulates.

**Grind** – to chop or pulverize food, such as meat, into small particles by using a food chopping device or meat grinder.

**Knead** – to work dough, such as bread dough, by pressing, folding, and stretching to develop the dough structure.

**Leaven** – to cause food such as bread, to rise and increase volume by adding a leavening agent such as yeast or baking powder.

**Marinate** – to soak a food, such as meat or vegetables, for a period of time in a sauce with herbs, spices, and condiments to enrich its flavor and/or to tenderize it.

**Melt** – to turn a solid food into a liquid by heating.

# Glossary of Terms for Processes and Methods

continued

**Mince** – to finely chop food, such as garlic, into very small pieces.

**Mix** – to blend or combine two or more ingredients.

**Parboil** – to boil in water briefly as a preliminary cooking step. May be used with vegetables and meat.

**Pare** – to thinly trim off the outer covering or skin of a food, such as potatoes.

**Peel** – to strip off the outer covering of a food, such as oranges.

**Punch down** – to remove air bubbles from risen yeast dough by pushing the dough down with the fist.

**Reconstitute** – to bring back a concentrated food, such as a juice concentrate, to the original strength – or a dry food, such as nonfat dry milk, to the original state – by adding liquid.

**Rehydrate** – to add fluids back into a dried food such as dehydrated onions.

**Roast** – to cook by dry heat, uncovered, in an oven. A suitable cooking method for tender meat roasts.

**Scald** – to heat a liquid, such as milk, to a temperature just below the boiling point. Tiny bubbles will appear around the edge of the pan.

**Shred** – to cut or grate foods into narrow strips.

**Simmer** – to cook in liquid that is kept just below the boiling point.

**Slice** – to cut a food with a knife or slicing equipment.

**Steam** – to cook food in steam generated by boiling water or in steam equipment.

**Stir** – to mix ingredients with a circular motion without beating.

**Whip** – to rapidly beat a food, such as eggs or cream, incorporating air to lighten the mixture and to increase its volume. Usually whipping is done with a whisk, fork, or mixing equipment.



# Weighing and Measuring Ingredients

Both weight and volume measures are listed for most ingredients on each recipe. (For ingredients in amounts less than 2 ounces, and for liquids, only volume measures are given.) Keep in mind that **weighing** is more accurate than measuring. The recipes were standardized using weight measurements unless only a volume measurement is provided. Whenever possible **weigh the ingredients**. If scales are not available, be sure to use the correct methods of **measuring** as suggested below:

## To Measure Liquid and Dry Ingredients

- Use standard measuring equipment and/or utensils.
- Make measurements level.
- Use the largest appropriate measure to save time and to reduce margin error. (Example: use a 1-gallon measure once rather than a 1-quart measure four times.) Exception: To measure flour, use no larger than a 1-quart measure. Otherwise, flour will pack. Note, however, as mentioned previously, that flour is best weighed rather than measured by volume.

## Measuring Procedures for Common Foods

### Flour (white or whole-grain), or meals:

- Spoon flour lightly into measure and level off with straight-edged knife or spatula.
- Do not shake or tap measure
- Be sure flour does not pack. (Flour should be measured in nothing larger than a 1-quart measure.)

### Nonfat dry milk:

- Stir lightly. Spoon into measure and level off with a spatula.

### Dried whole eggs:

- Spoon lightly into measure and level off with a spatula.

### Sugar, granulated, white or brown:

- Spoon into measure and level off with a spatula. If lumpy, sift before measuring.

### Brown sugar, packed:

- If lumpy, roll out lumps with rolling pin. Pack regular brown sugar firmly into measure. The sugar should take the shape of the container when turned out.

### Baking powder, baking soda, and dry spices:

- Stir lightly. Fill measuring spoons to heaping. Level off with a spatula.

### Butter, margarine, and shortening:

- Press solid fat firmly into measure and level off with a spatula.
- When formed in measurable sticks or pounds, simply slice off the amount needed. For easy measuring:
  - 1 stick (1/4 pound) measures about 1/2 cup.
  - 4 sticks (1 pound) or 1-pound block measure about 2 cups.

# Substitutions of Ingredients in Recipes

Ingredients that may be used in place of ingredients listed in a recipe are given below:

In Place of	Use
1 teaspoon baking powder	1/4 teaspoon baking soda plus 5/8 teaspoon cream of tartar
1 tablespoon double acting baking powder	3/4 teaspoon baking soda plus 1 1/2 cups buttermilk or sour milk (to replace 1 1/2 cups liquid)
1 package active dry yeast (1/4 ounce)	2 1/4 teaspoons active dry yeast
1 ounce active dry yeast	3/4 ounce instant yeast (check manufacturer's instructions) <b>OR</b> 2 ounces compressed yeas
1 cup flour (for thickening)	1/2 cup cornstarch <b>OR</b> 2/3 cup granulated tapioca
1 cup cake flour	1 cup all-purpose flour minus 2 tablespoons
1 ounce or 1 square chocolate	3 tablespoons cocoa plus 1 tablespoon fat
1 cup margarine	1 cup butter
1 cup shortening	1 to 1 1/8 cups butter and subtract 1/2 teaspoon salt from the recipe
4 No. 10 cans tomato juice	1 No. 10 can tomato paste plus 3 No. 10 cans water
2 No. 10 cans tomato puree	1 No. 10 can tomato paste plus 1 No. 10 can water
1 quart lemon juice	1 cup lemon juice concentrate (3 to 1) plus 3 cups water
Whole eggs	See page 50, "Dried Eggs, or page 51, "Frozen Eggs"

# Can Sizes (Common Weights and Measures)

## Can Sizes (Common Weights and Measures)

Can Size <sup>1</sup>	Average Net Weight or Fluid Measure Per Can <sup>2</sup>	Average Volume Per Can in Cups	Cans Per Case	Approximate No. of Cans Equal to No. 10 Can <sup>3</sup>	Common Products Found in Can Size
					<b>Institutional Size:</b>
No. 10	6 lb (96 oz) to 7 lb 5 oz (117 oz)	12 cups to 13 2/3 cups	6	1	Fruit and vegetables; some other foods
No. 3 Cyl	(51 oz (3lb 3oz) or 46 fl oz (1qt 1 7/8 cups)	5 3/4 cups	12	2.1	Condensed soups, some vegetables, meat and poultry products, fruit and vegetable juices
					<b>Family Size:</b>
No. 2 1/2	26 oz (1 lb 10 oz) to 30 oz (1 lb 14 oz)	3 1/2 cups	24	3.7	Fruits, some vegetables
No. 2 Cyl	24 fl oz (3 cups)	3 cups	24	4	Juices, soups
No. 2	20 oz (1 lb 4 oz) or 18 fl oz (1 pt 2 fl oz)	2 1/2 cups	24	5.3	Juices, ready-to-serve soups, some fruits
					<b>Small Cans:</b>
No. 300	14 oz to 16 oz (1 lb)	1 3/4 cups	24	7.4	Some fruits and meat products
No. 2(Vacuum)	12 oz	1 1/2 cups	24	8 to 9	Vacuum pack corn
No. 1 (Picnic)	10 1/2 oz to 12 oz	1 1/4 cups	48	10 to 11	Condensed soups, some fruits, vegetables, meats, and fish
8 oz	8 oz	1 cup	48 or 72	12	Ready-to-serve soups, fruits, and vegetables

<sup>1</sup> Can sizes are industry terms and do not necessarily appear on the label.

<sup>2</sup> The net weight on can or jar labels differs according to the density of the contents. For example: A No. 10 can of sauerkraut weighs 6 lb 3 oz; a No. 10 can of cranberry sauce weighs 7 lb 5 oz. Meats, fish, and shellfish are known and sold by weight of contents.

<sup>3</sup> Number of cans to equal a No. 10 can are approximate measures. More exact measures can be made by using exact volume or weight of contents.

# Instant Nonfat Dry Milk

The weight and volume measures for instant nonfat dry milk are given in the recipes. For best results, dry milk should be weighed rather than measured. All of the recipes are standardized using instant nonfat dry milk.

Where possible, to save preparation steps, dry milk is combined with other dry ingredients in the recipes and the required amount of water is added along with other liquid ingredients. If a recipe indicates “Instant nonfat dry milk, reconstituted,” use the ratios of dry milk and water to prepare the amount of reconstituted milk needed for

the recipe. If desired, fluid milk may be used in place of reconstituted nonfat dry milk in the recipes.

## To Prepare Sour Milk

To prepare 1 gallon of sour milk, use 1 cup vinegar in place of 1 cup of the water in fluid skim milk recipe.

## Reconstituting Nonfat Dry Milk (Fluid Skim Milk = Nonfat Dry Milk + Water)

Fluid Skim Milk	Instant Nonfat Dry Milk		Water
	Weight	Measure	
1 quart	3 1/2 oz	1 1/3 cups	3 3/4 cups
2 quarts	7 oz	2 2/3 cups	1 qt 3 1/2 cups
3 quarts	10 1/2 oz	1 qt	2 3/4 qt
1 gallon	14 oz	1 qt 1 1/3 cups	3 3/4 qt
2 gallons	1 lb 12 oz	2 qt 2 2/3 cups	1 gal 3 1/2 qt
3 gallons	2 lb 10 oz	1 gal	2 gal 3 1/4 qt
4 gallons	3 lb 8 oz	1 gal 1 1/4 qt	3 3/4 gal
5 gallons	4 lb 6 oz	1 gal 2 3/4 qt	4 3/4 gal
6 gallons	5 lb 4 oz	2 gal	5 gal 2 1/2 qt



# Shell Eggs

## Using Fresh Shell Eggs

Purchase only refrigerated, fresh, clean, unbroken, and odor-free eggs. While the size and grade are marked on the carton or case, the weight is not. The following table shows the weight of different sizes of shell eggs and the number to fill a 1-quart measure. The table can be used to determine the correct number of shell eggs to use in a recipe when a weight or volume measure is specified.

Refrigerate promptly upon delivery to help maintain quality. Store away from foods with a strong odor such as onions, cabbage, and broccoli.

## CAUTION

Eggs should be received cleaned and in sound condition. Eggs that are not cleaned or that have been damaged should be discarded.

**Do not use** uncooked eggs in uncooked foods; milk drinks (such as eggnog or milkshakes); uncooked salad dressings; or uncooked puddings.

Weight of Different Sizes of Shell Eggs and Number per Quart					
Size (see note)	Minimum Weight in Shell		Approximate Number per Quart (2 lb 2 oz)		
	1 Dozen (Carton)	30 Dozen (Case)	Whole Eggs	Egg Yolks	Egg Whites
Extra large	27 oz (1 lb 11 oz)	50 lb 8 oz	17	49	26
*Large	24 oz (1 lb 8 oz)	45 lb	19	55	29
Medium	21 oz (1 lb 5 oz)	39 lb 8 oz	22	63	33
Small	18 oz (1 lb 2 oz)	34 lb	25	74	39

\*All shell eggs used in the recipes are large size.

**NOTE:** Size and grade are marked on the carton or case, but weight is not.

# Dried Eggs (Storing, Preparing, and Using)

Store unopened packages of dried eggs in the refrigerator (35 °F to 40 °F) or in a cool dry place (32 °F to 50 °F). After opening, tightly cover the containers and store in the refrigerator.

## Preparing Dried Eggs

Reconstitute only the amount of eggs needed. **RECONSTITUTED DRIED EGGS ARE HIGHLY PERISHABLE.** Do not store overnight. To reconstitute dried eggs for use in place of shell eggs, follow the directions on the package or use the directions given below.

## Using Dried Eggs

Dried eggs may be used in place of shell eggs only in **thoroughly cooked** products or in **cooked** salad dressings. Thoroughly cooked foods include: baked breads, cakes, long-cooked casseroles, and baked custards.

Dried eggs may be added to the dry ingredients in a recipe for some baked products. Weigh the dried eggs or measure as below. Blend thoroughly with the dry ingredients. Add the water needed to reconstitute the dried eggs with the other liquids in the recipe.

When using dried eggs follow the recipe directions carefully. Use the guidelines below as safeguards against bacterial contamination:

- Bake foods in pans of the size, number, and depth specified in the recipe.
- If other pan sizes are used, fill them to a depth of not more than 2 1/2" – with the exception of baked or steamed scrambled eggs, which should be no more than 1" in depth – to ensure adequate heat penetration.
- Deeper layers of food than specified might not be thoroughly cooked during the recommended cooking time.

Number of Eggs (Large Size)	DRIED EGGS		Water	Directions
	Weight	Measure		
	WHOLE EGGS (see Note)			
10	5 oz	1 2/3 cups	1 2/3 cups	<ol style="list-style-type: none"> <li>1. Weigh the dried eggs or place lightly in measuring spoon or cup and level top. Do not pack the eggs. Use exact weights or level measures.</li> <li>2. Sprinkle dried eggs over the required amount of water.</li> <li>3. Blend by using a mixer, rotary beater, or wire whip.</li> <li>4. Use reconstituted eggs immediately.</li> </ol>
12	6 oz	2 cups	2 cups	
25	12 1/2 oz	1 qt 1/4 cup	1 qt 1/4 cups	
32	1 lb	1 qt 1 1/3 cups	1 qt 1 1/3 cups	
YOLKS				
10	3 oz	1 1/4 cups	6 2/3 Tbsp	
12	3 1/2 oz	1 1/2 cups	1/2 cup	
54	1 lb	1 qt 2 1/3 cups	2 1/4 cups	
WHITES				
10	1 1/2 oz	6 2/3 Tbsp	1 1/4 cups	
12	2 oz	1/2 cup	1 1/4 cups	
100	1 lb	1 qt 1/4 cup	3 qt 1/2 cup	

**NOTE:** Quantities are for dried whole eggs. For blends and specialty egg products (containing less than 100% whole egg), follow manufacturer's directions.

# Frozen Eggs (Storing, Thawing, and Using)

## Storing and Thawing Frozen Eggs

Store frozen eggs at 0 °F or below in the freezer.

Thaw in the refrigerator (35 °F to 40 °F) in an airtight container and thaw only the amount needed. **USE THAWED EGGS WITHIN 24 HOURS.** Thawed frozen eggs are highly perishable.

## Using Frozen Eggs

Frozen eggs may be used in place of shell eggs only in **thoroughly cooked products** or in cooked salad dressings for which short cooking is safe because of high acidity. Thoroughly cooked foods include: baked breads, cakes, long-cooked casseroles, and baked custards. Weight and volume measures are given below for using frozen eggs in place of shell eggs in recipes.

**CAUTION:** Do not use frozen eggs in uncooked or slightly heated foods such as milk drinks, ice cream, uncooked salad dressings, cream puddings, soft custards, omelets, or scrambled eggs cooked on top of the range.

When using frozen eggs, follow the recipe directions carefully. Use the guidelines below as safeguards against bacterial contamination:

- Bake foods in pans of the size, number, and depth specified in the recipe.
- If other pan sizes are used, fill them to a depth of not more than 2 1/2” – with the exception of baked or steamed scrambled eggs, which should be no more than 1” in depth – to ensure adequate heat penetration.
- Deeper layers of food than specified might not be thoroughly cooked during the recommended cooking time.

FROZEN EGGS*						
Number of eggs (Large Size)	WHOLE EGGS		YOLKS		WHITES	
	Weight	Measure	Weight	Measure	Weight	Measure
9	1 lb	2 cups less 2 Tbsp	....	....	....	....
10	1 lb 3/4 oz	2 cups	6 1/4oz	3/4 cups	11 1/2 oz	1 1/2 cups 2 Tbsp
12	1 lb 5 1/2 oz	2 1/2 cups	7 1/4 oz	3/4 cups 2 Tbsp	14 oz	1 1/2 cups 2 Tbsp
14	....	....	....	....	1 lb	2 cups less 2 Tbsp
25	2 lb 13 oz	1 qt 1 1/4 cups	....	....	....	....
26	....	....	1 lb	2 cups less 2 Tbsp	....	....

\*The same weight and volume measures may be used for shelled fresh eggs.

# Steamtable Pan Capacity

The steamtable pan capacity chart shows the approximate capacity in volume measure of common sizes of steamtable pans, and the approximate number of servings that can be obtained from various sizes of portioning utensils. The information in the chart is based on a full-size 12”x 20”, straight-sided steamtable pan filled to the brim. Pan depths are for 2 1/2”, 4”, and 6” steamtable pans.

Measures given in the chart are approximate and may vary according to manufacturer’s specifications, pan fill, and type of food. Pans made by different companies may have slightly different total capacities. If used for transporting foods, the steamtable pans will have lids and might not be filled to the brim. The number of servings may vary according to the type of food being served. Some foods cling to the bottom and sides of the pan, reducing the number of servings.

Use the chart as a guide to help estimate the number of steamtable pans needed for the serving period, and to approximate the yield of a full steamtable pan.

Pan Size (Inches)	Approximate Capacity (Gallons)	Serving Size (Cups)	Ladle (Fluid Ounces)	Scoop No.	Approximate Number of Servings
12” x 20” x 2 1/2”	2	1/2 cup	4 oz	8	64
		3/8 cup	....	10	85
		1/3 cup	3 oz	12	96
		1/4 cup	2 oz	16	128
12” x 20” x 4”	3 1/2	1/2 cup	4 oz	8	112
		3/8 cup	....	10	149
		1/3 cup	3 oz	12	168
		1/4 cup	2 oz	16	224
12” x 20” x 6”	5	1/2 cup	4 oz	8	160
		3/8 cup	...	10	213
		1/3 cup	3 oz	12	240
		1/4 cup	2 oz	16	320

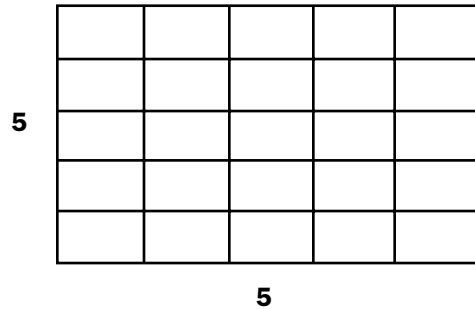
# Portioning Diagrams

## Approximate Dimensions of Serving Sizes From Different Pan Sizes

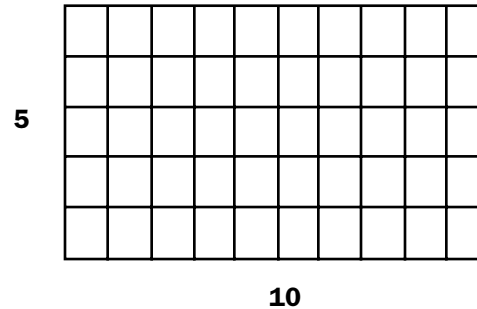
Pan	Approximate Pan Size	Number and Approximate Size of Servings Per Pan		
		25	50	100
Baking or steamtable	12" x 20" x 2 1/2"	2" x 3 3/4"	2" x 2"	....
Sheet or bun	18" x 26" x 1"	3 1/4" x 5"	3 1/4" x 2 1/2"	1 3/4" x 2 1/2"

## Cutting Diagrams for Portioning

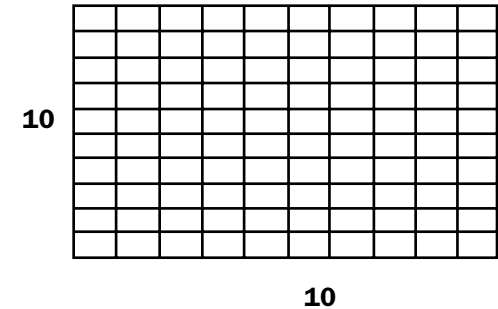
For 25 Servings cut 5x5



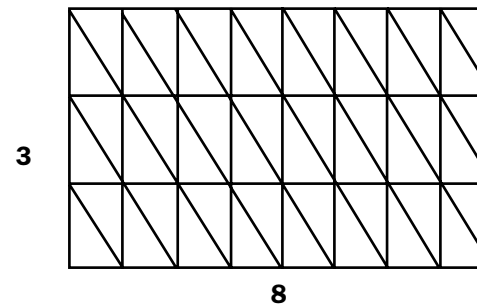
For 50 servings cut 5x10



For 100 servings cut 10x10



For 48 servings cut 3x8 then diagonally



# Portion control

The recipes are standardized to yield a certain number of servings specified in the recipe. To obtain that number of servings, follow the specified serving size as closely as possible. Scoops, ladles, or spoons of standard sizes help in serving equal-sized portions.

## Ladles

The following sizes of ladles will help in obtaining equal-size servings of soups, sauces, creamed foods, and similar foods. Perforated ladles are available for accurate portioning of foods that need draining.

Ladle Size	Approximate Measure
1 oz	1/8 cup
2 oz	1/4 cup
4 oz	1/2 cup
6 oz	3/4 cup
8 oz	1 cup

## Scoop (or Disher) Number

The number of the scoop or disher indicates the number of **level** scoopsful it takes to make 1 quart. The following table gives an approximate measure for each scoop:

Scoop or Disher Number	Approximate Measure
6	2/3 cup
8	1/2 cup
10	3/8 cup
12	1/3 cup
16	1/4 cup
20	3 1/3 Tbsp
24	2 3/4 Tbsp
30	2 Tbsp
40	1 2/3 Tbsp
50	3 3/4 tsp
60	3 1/4 tsp
70	2 3/4 tsp
100	2 tsp

## Measuring-Serving Spoons

Measuring-serving spoons are volume-standardized serving spoons identified for a specific volume measure. They are similar to a ladle, scoop, disher, or dipper in that they can be used to measure specific volumes of food but they are shaped like a serving spoon (solid or perforated.) Measuring-serving spoons are labeled in ounces (which are understood to be fluid ounces, not avoirdupois (weight) ounces).

Size of Measuring-Serving Spoon	Approximate measure
2 oz	1/4 cup
3 oz	3/8 cup
4 oz	1/2 cup
6 oz	3/4 cup
8 oz	1 cup

## Serving Spoons

A serving spoon (solid or slotted) may be used instead of a scoop. Since these spoons are not identified by number, it is necessary to measure or weigh the quantity of food from the spoons used. This will help ensure that the proper portion size is served.

# Garnishing Techniques

A garnish is a food item or part of a food item used to enhance the food being served; for example, a dash of cinnamon over applesauce, shredded cheese sprinkled over Chili Con Carne, or celery tops placed around a steamtable pan of Sloppy Joe filling.

Garnishes help to merchandise (sell) the food items offered. Students often choose food by how good it looks. Therefore, special attention to eye-catching garnishes on the serving line and student's trays can encourage menu selection.

## Considerations in Garnishing

1. A garnish should generally be edible and should be handled carefully to prevent spoilage and food poisoning. (NOTE: Always wash a vegetable or fruit before preparing it as a garnish.)
2. Position the garnish closest to the student (customer). The customer should be able to see the entire garnish. Place the garnish in the corner to serve most of the food without moving or reaching over the garnish.
3. Garnishes need not require a lot of time or money to prepare. Attractive garnishes can be made from foods on hand. The following foods may be sliced, diced, or used as is, as appropriate, for a quick garnish:  
  
Apples, Bread crumbs, Celery, Cheese, Coconut, Croutons, Cucumber, Grapes, Lettuce, Nuts, Onion, Paprika, Parsley, Parsley flakes, Peaches, Raisins, Tomato.
4. Garnishes need not require special equipment. Only simple tools are needed; for example, a sharp pointed knife for paring, a serrated knife for bread and tomatoes, and a vegetable peeler for paring fruits and vegetables. Special garnishing tools, such as a V-cutter for zig-zag finish or a garnishing knife for making "crinkle or waffle" cuts, may be purchased, if desired.

## Choosing a garnish

A garnish should be appropriate for the food being served. Use combinations of colors that blend well. Be sure the flavor of the garnish accents or is compatible with the flavor of the menu item being served. In addition, be sure the size of the garnish is appropriate. For example, too heavy a garnish for beef stew will sink to the bottom of the pan and too small a garnish will fail to stand out.

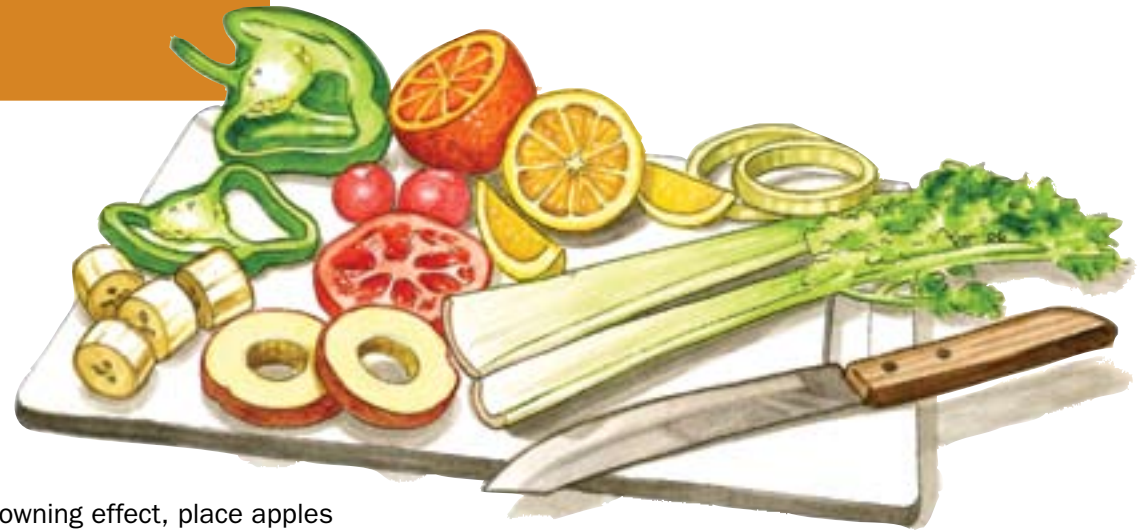
Some foods with their own vivid color and texture need no garnish, while other foods do need garnishing. For example, pizza with its bright variety of colors needs little or no extra garnish, whereas a steamtable pan of hamburger patties lacks color and could benefit from a garnish for better appeal. A creative arrangement of food in a steamtable pan can also be appealing. For example, sandwiches and proportioned meals can be displayed in an overlapping or shingled arrangement.

# Garnishing Techniques

continued

## Garnishes

Apple rings, \*apple slices, \*banana chunks, carrot coins, green pepper strips, onion rings, orange slices, lemon wedges, tomato slices, and tomato wedges can be used effectively as garnishes. The following are ideas and instructions for creating more unusual garnishes from fruits and vegetables.



\*To delay the browning effect, place apples and bananas in citrus or pineapple juice, or in a lemon juice and water mixture. When ready to use, remove the fruit from the solution. Drain.



### Carrot Ribbons or Curls

1. Slice carrot in half lengthwise.
2. With a peeler, peel a single strip from the cut surface.
3. Drop in ice water and the strip will curl by itself.
4. Remove from ice water. Drain.



### Celery Fans

1. Cut celery stalk into 2 or 3 equal lengths.
2. Make 1 1/4" slashes into one end or both ends of stalk.
3. Fan one end or both ends of stalk.
4. Drop in ice water.
5. Remove from ice water. Drain.



### Radish Rose

1. Cut a thin slice off the bottom and top of the radish.
2. Make 4 cuts across the radish horizontally almost to the bottom and then make 4 cuts across the radish vertically.
3. Place in ice water until open (overnight if possible). Remove from ice water. Drain.



# Garnishing Techniques

continued



## Onion Mum

1. Select a medium-sized, well-rounded white onion.
2. Peel the outer skin off the onion. Leave the root end intact but cut off any roots.
3. Using a sharp knife, start at the top of the onion and make a cut downward toward the root end. Be careful not to go all the way to the root end but stop about 1/2" from it. Make this cut deep into the center of the vegetable. Make additional cuts until you have gone completely around the onion.
4. When cutting is completed, place onion in a bowl of hot water. This will start the petals spreading and remove the onion smell.
5. Let soak for 5 minutes, then replace the hot water with ice water to allow the flower to bloom further.
6. Color the onion mum by placing food coloring in the ice water. Let soak until the desired tint is obtained.



## Radish Tulip

1. Cut a thin slice off the bottom and top of the radish.
2. Make 3 cuts from the top of the radish almost to the base, making 6 equal segments.
3. Place in ice water until open (overnight if possible). Remove from water. Drain.



## Lemon or Orange Twists

1. Cut fruit into 1/4" horizontal slices.
2. Slit each slice and twist.



## Tomato Rose

1. Use a sharp paring knife. With the stem and of the tomato down, begin peeling on the smooth end. Cut around the tomato in a spiral, making a continuous strip about 3/4" wide. Do not be concerned if the peel breaks.
2. To form the rose, roll one end of the peel tightly to make the center. Loosely roll the remaining peel around the center.
3. Use a pick to secure the rose base. Cut off excess pick. CAUTION: Be sure pick is firmly secured in the rose, so pick will not fall into the food during service.

**NOTE:** Storing tomato garnishes is not recommended.