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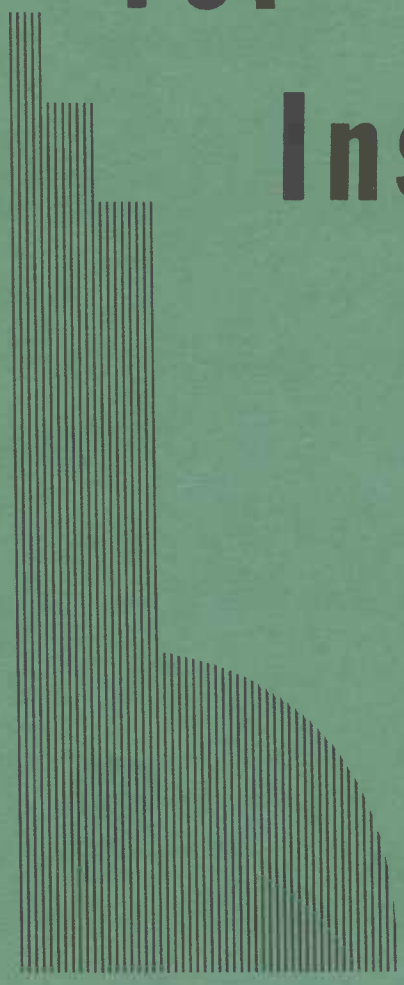
Planning Food for Institutions



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UNITED STATES DEPARTMENT of AGRICULTURE

Bureau of Human Nutrition and Home Economics

Agriculture Handbook No. 16

FOREWORD

The practical application of principles of nutrition to the diets of the people in this country long has been of concern to the Bureau of Human Nutrition and Home Economics. Over a period of years, the Bureau has translated nutrient requirements of individuals into quantity budgets taking into account advances in knowledge of human requirements and nutritive value of foods, and changes in food supplies, food costs, and family food habits. These budgets represent different combinations of food that provide guides for planning family diets.

This publication has been prepared in response to many requests for similar help in planning diets for institutions--among them, a request from the Committee on Institutional Feeding of the Food and Nutrition Board, National Research Council. The publication is designed primarily for nutritionists and others who are called upon to help food managers and administrators plan adequate diets within their money allowances.

Food consumption patterns and special problems in management in institutions were studied preparatory to developing the food budgets for institutions. Through the cooperation of Jane Hartman, Consultant Dietitian, Maryland Department of Health, current food purchase records from a number of Maryland institutions of different types were made available. Purchase data were obtained also from a general hospital in Washington, D. C. These records were analyzed and, in addition, published reports on current practices in group feeding were reviewed.

In March 1950 a preliminary edition of Planning Food for Institutions was released for comment and suggestions to various persons throughout the country who are concerned with institutional feeding. Insofar as possible, suggestions that related to the planning and purchasing of food have been incorporated in this edition. A list has been included of Federal publications that contain information on aspects of institutional food management not within the scope of this publication.

Appreciation is expressed to those who have so generously cooperated in making the publication possible.

Hazel K. Stiebeling, Chief

United States Department of Agriculture

Agriculture Handbook No. 16

PLANNING FOOD FOR INSTITUTIONS

By

Rosalind C. Lifquist

and

Edith B. Tate

Bureau of Human Nutrition and Home Economics

Agricultural Research Administration

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PLANNING FOOD FOR INSTITUTIONS

One of the first questions usually asked about an institution is "How is the food?"

To people in any institution, and particularly to those who may live a large part of their lives in an institution, food is extremely important. Mealtime should be an anticipated event. It may be the chief pleasure of many residents, especially those whose activities are limited. Well-planned and satisfying meals will create a happier atmosphere and bring rewards in better morale and well-being. Recognizing this, an increasing number of institutions are attempting to plan and serve meals that are well liked and at the same time are nutritionally adequate.

Planning diets in institutions is not an easy task. Meals must provide the right kinds of food for individuals who may vary greatly in their nutritional needs. These meals must satisfy people who may have very different food likes. And usually the food must be purchased within a definite money allowance. It is essential, therefore, that a food manager know the basic needs of the residents and how to meet these needs within a fairly well defined cost limit.

NUTRIENTS NEEDED FOR AN ADEQUATE DIET

Recommended Dietary Allowances

People of different ages and degrees of physical activity differ in their nutritional needs. Although the kind of nutrients required are the same, the quantities vary. Adults and children can get their nutrients from the same kind of food. Growing children, however, must have relatively more of the foods that build muscle and bone.

Quantities of food energy and nine nutrients to meet the needs of persons of different ages and degrees of activity have been recommended by the National Research Council (Appendix table 4, p. 27). In general, these nutrients can be obtained from commonly used foods.

Foods That Provide the Essential Nutrients

Many different combinations of foods will provide an adequate diet. In this country, an adequate diet planned around the food habits of the people usually includes certain groups of foods every day: Leafy, green, and yellow vegetables; citrus fruit and tomatoes; potatoes, sweetpotatoes; other vegetables and fruits; dairy products; protein-rich foods such as meat, poultry, fish, eggs, and dry beans, peas, or nuts; enriched, restored, or whole-grain cereals and cereal products; and butter or fortified margarine. Such foods as sugar, and fats other than butter and margarine, can then be added as needed for energy and for palatability.

Everyday Foods Classified in 11 Groups

For convenience in planning, the most common everyday foods are classified into 11 groups in the following lists, and the number of servings needed daily to provide an adequate diet is indicated. Although the lists are not complete, they can be used as a guide in placing most foods in their proper group. Miscellaneous items such as coffee and tea, seasonings and flavorings, and baking powder and soda, are not included in the 11 groups.

LEAFY, GREEN, AND YELLOW VEGETABLES
(fresh, canned, frozen)

Plan to use: 1 or more servings daily.

Asparagus, green	Collards	Peppers, green
Beans, lima	Endive	Pumpkin
Beans, snap, green	Escarole	Spinach
Broccoli	Kale	Squash, winter yellow
Brussels sprouts	Lettuce	Turnip greens
Cabbage, green	Mustard greens	Wild greens
Carrots	Okra	Other greens, including salad greens
Chard	Peas	

CITRUS FRUIT, TOMATOES
(fresh, canned, frozen)

Plan to use: 1 or more servings daily.

Grapefruit	Limes	Tangerines
Lemons	Oranges	Tomatoes and tomato products

The following foods are also good sources of vitamin C and may be used to supplement citrus fruit and tomatoes:

Raw green cabbage, salad greens, raw green peppers, raw turnips.
Raw strawberries, raw pineapple, cantaloup (muskmelon).

If these foods are used instead of citrus fruit or tomatoes, they should not be counted also toward meeting the recommended number of servings for other groups of vegetables and fruits.

POTATOES, SWEETPOTATOES
(fresh, canned)

Plan to use: 1 or more servings daily.

Potatoes	Sweetpotatoes

OTHER VEGETABLES AND FRUITS
(fresh, canned, frozen, dried)

Plan to use: 1 or more servings daily or additional servings of leafy, green, or yellow vegetables.

Artichokes	Onions	Apples	Figs
Beets	Parsnips	Apricots	Grapes
Cauliflower	Radishes	Avocados	Melons
Celery	Rutabagas	Bananas	Peaches
Corn, sweet	Sauerkraut	Berries	Pears
Cucumbers	Summer squash	Cherries	Pineapple
Eggplant	Turnips	Cranberries	Plums
		Currants	Prunes
		Dates	Raisins
			Watermelons

MILK, CHEESE, ICE CREAM

Plan to use daily the following amounts of milk or its equivalent (see p. 20 for equivalents). The quantities include milk used both for drinking and for cooking.

Children through teen age: 3 to 4 cups
Adults: 3 cups
Pregnant women: A little more than 1 quart
Nursing women: 1-1/2 quarts

The group includes:

Milk, fluid	Milk, condensed
Milk, skim	Buttermilk
Milk, dry, whole	Cheese
Milk, dry, nonfat	Ice cream
Milk, evaporated	

MEAT, POULTRY, FISH
(fresh, canned, cured, frozen, dried)

Plan to use: 1 or more servings daily (include liver or other variety meats once a week, if possible). Additional servings of eggs may be used in place of some of the meat.

Beef	Liver	Chicken
Lamb	Heart	Duck
Mutton	Kidney	Goose
Pork (except bacon and fat back)	Brains	Turkey
	Tongue	Fish, all kinds
Veal	Sweetbreads	

EGGS
(fresh, frozen, dried)

Plan to use: 4 or more a week or additional servings of meat, poultry, fish.

DRY BEANS AND PEAS, NUTS

Plan to use: 1 or more servings a week.

Dry beans (all kinds)	Soya flour and grits
Dry peas	Peanuts
Lentils	Peanut butter
Soybeans	Nuts, all kinds

FLOUR, CEREALS, BAKED GOODS

Plan to use: Some enriched, whole-grain, or restored cereals or cereal products daily, others as needed for satisfying meals.

Flour, enriched or whole grain--all types	Rolls
Uncooked cereals	Cakes
Ready-to-eat cereals	Cookies
Bread, enriched or whole grain--all kinds	Crackers
	Pies

FATS AND OILS

Plan to use: Some butter or fortified margarine daily; other fats as needed in cooking.

Butter	Bacon
Margarine	Salt pork
Mayonnaise	Shortening
Salad dressing	Suet
Salad oil	Drippings

SUGAR, SIRUPS, PRESERVES

Plan to use: As needed for food energy and flavor in meals.

Sugar (cane or beet)	Jams
Sugar, brown	Jellies
Molasses	Preserves
Sirups	Candies
Honey	

PLANNING NUTRITIONALLY ADEQUATE AND SATISFYING MEALS

With the basic needs defined in terms of nutrients and the foods that supply them, the next step is to plan to use these foods in attractive and satisfying meals.

Factors That Affect Food Selection and Preparation

The foods that can be served will depend upon such factors as the type of individuals in the institution, the amount of money allowed, availability of foods (especially fresh foods), storage facilities, and staff and equipment for food preparation.

Food selection will be influenced somewhat by the type of individuals in an institution. Meals for adolescents will differ from those served to elderly inactive persons. Likewise, meals suitable for older people will not satisfy the needs of men doing hard manual labor.

The level of food money allowance will affect the variety of food served, as well as the quantities of the more expensive foods that are used. With a fairly liberal food allowance, more kinds of food and larger amounts of the more expensive foods such as roasts and chops can be served. As the allowance becomes more limited, larger quantities of the less expensive foods such as breads, cereals, cereal products, potatoes, and the cheaper cuts of meat must be used, and greater ingenuity and skill are needed to plan meals that are not monotonous.

It is fortunate that diets both nutritionally adequate and satisfying can be obtained at different food cost levels. By careful food selection, costs can be controlled within certain limits without endangering the nutritional adequacy of the diet. For example, milk is an essential part of all normal diets. Although the quantity needed varies with individuals, milk in one of its forms must be included every day. If using all fluid milk makes the bills too high, other less expensive forms such as evaporated milk can be used for many purposes.

Nonfat dry milk, although lacking in the fat and vitamin A value of whole milk, is nevertheless a good source of protein, calcium, and riboflavin. It is usually cheaper than fluid whole milk and can be used in baked products, cream sauces, soups, and cocoa and other beverages.

If an institution has its own farm or is located in or near a city, obtaining fresh foods may not present a problem. Many institutions, however, are a considerable distance from supplies of fresh foods. If deliveries are irregular or infrequent, it may be necessary to use canned foods more often, as well as other types of food that can be kept for some time.

Sometimes refrigerated storage is exceedingly limited. This will have an additional effect on the quantity of fresh foods that can be kept on hand for use between infrequent or irregular deliveries.

The form in which food can be served is influenced by the equipment and by the number of food service employees in relation to the number of persons to be served. If labor-saving equipment is inadequate, or if the ratio of employees to persons fed is low, foods will have to be planned that take a minimum amount of preparation, especially last minute preparation. For example, it would be very difficult to serve whipped potatoes to a large group if the potatoes had to be mashed by hand and the number of kitchen employees was small.

Again, if meals are served directly from the kitchen to a common dining room, the foods selected may be different from those used when meals are sent from the main kitchen to several smaller units for serving.

Making Menus

The constant longing of many institutional residents for a home-cooked meal is often, in part, a desire to escape from the monotony that so often characterizes institutional food. A common criticism is that the food service "gets into a rut"--that the day of the week can be told by the meals that are served. The successful food manager avoids such criticism by considering variety and appetite appeal as well as nutritive value when planning menus.

Although one person should be responsible for the planning, it is a good idea to give residents a chance to suggest foods they like. Including one food each day that someone has asked for will not ruin the menus nor is it likely to throw costs out of line.

Interest can be added to mealtimes by making festive occasions of holidays and once in a while changing the type of service. Serving Sunday night supper buffet style, for instance, or having a picnic on a spring afternoon, especially in a children's institution, will break the monotony of three meals a day served in the same place and in the same way. Considerations such as these will give residents a feeling that they count--that they are important. Results will be well worth the little extra effort.

If possible, it is well to serve the same menu to all unless special diets have been prescribed. Having one set of menus for the "pay folks" and another for the less fortunate, or a steak dinner for the "bosses" and left-overs for the help, lowers morale.

Menu-Making Suggestions and Guides

Menus that please everyone are difficult to plan. However, certain basic rules and techniques can be used to aid in the planning of attractive meals that are acceptable to the majority of persons to whom they are served. The following suggestions are offered as guides to planning nutritionally well balanced and attractive meals.

Plan in advance.--Planning meals for at least a week in advance lessens the chance of repeating a food too often. Rotating weekly menus in entirety is always to be avoided.

Have a general meal pattern.--A meal pattern is a design indicating the types of food that are to be included in each meal. Patterns in common use in many institutions are similar to the following:

Breakfast	Lunch or supper	Dinner
Fruit	Main dish	Main dish
Cereal	Vegetable or salad	Vegetables (2 or 3 or salad in place of 1 vegetable)
Main dish	Bread Spread	Bread Spread
Bread Spread	Fruit or dessert	Dessert
Beverage	Beverage	Beverage

The chief difference in meal patterns in different institutions is in the number of food items included. In general, when the food allowance is limited, fewer items are included and the servings of each are somewhat larger than when there is more to spend.

Follow the food groups.--To be reasonably sure that the proper nutrients are being supplied in the diet, follow the food groups (p. 2) in planning menus, including in each day's meals the number of servings indicated from each group. Some dishes, such as ham à la king, salads, and butterscotch pudding, combine foods from more than one group. An illustration is shown on page 8.

Serve simple fare.--Plain, well-cooked, and attractively served foods usually are more acceptable than fancy or mixed foods. Mixtures often suggest that the same food is being repeated or that left-overs are always being served. This, in turn, suggests poor management. Also, when an unpopular food is used in a mixture, the dish may be refused by many, thereby causing waste.

Provide variety in texture, flavor, color.--Foods served in the same meal should provide variety in texture, flavor, and color.

A good rule is to include in a menu a crisp, a firm, and a soft food. This will guard against meals monotonous in texture, such as one of soup, creamed codfish, mashed potatoes, stewed tomatoes, and chocolate pudding.

Several highly seasoned foods should not be combined in one meal. Serving flavorful foods with milder ones, a bland food with a relish or sauce that is optional, is usually more acceptable. Seasonings and gravies that give the same flavor to different foods also can become monotonous.

Foods that make an attractive color combination tend to stimulate the appetite. A meal of all-white food is most uninteresting, especially on the all-white plate used in many institutions.

Sample Menus for 2 Days Showing How Foods from 11 Food Groups can be Used

Food group	Breakfast	Dinner	Lunch or supper	Breakfast	Dinner	Lunch or supper
Leafy, green, and yellow vegetables		Broccoli	Green lettuce		Green cabbage (salad) Carrots	Green asparagus
Citrus fruit, tomatoes	Grapefruit juice		Tomato (salad)	Tomato juice	Orange (salad)	
Potatoes, sweetpotatoes		Sweetpotatoes			Scalloped potatoes	
Other vegetables and fruits		Celery sticks Radishes Apples in pie	Peaches		Prunes (salad)	Whipped gelatin with bananas (dessert)
Milk, cheese, ice cream	Milk		Milk	Milk		Milk
Meat, poultry, fish		Roast shoulder of pork			Meat loaf	Ham-a-la-king on toast
Eggs	Scrambled eggs					Eggs in ham-a-la-king
Dry beans and peas, nuts			Baked lima beans		Nuts (salad)	
Flour, cereal, baked goods	Toast Wheat cereal	Rolls Apple pie	Raisin bread Oatmeal cookies	Toast Scrapple	Bread Butterscotch pudding	Rolls
Fats, oils 1/	Butter or margarine	Butter or margarine	Butter or margarine Salad dressing	Butter or margarine	Butter or margarine Gravy Salad dressing	Butter or margarine
Sugar, sirups, preserves 2/	Jam			Sirup		Jelly
	Coffee	Tea	Tea or coffee	Coffee	Tea	Tea or coffee

1/ Other fat used in cooking.
2/ Other sugar used in cooking and beverages.

Include food with "staying" quality.--Each meal should contain at least one food that has staying quality--one that gives a satisfied feeling so that an individual isn't hungry soon after the meal is over.

List suggestions for variety in meals.--Another guide for planning menus is a set of charts listing the different foods suitable for each meal and ways in which they can be prepared. A form for such charts is suggested below. It may prove useful in some localities to have a similar set for each season.

Include in the charts all foods popular in the institution that can be purchased within the ration allowance and prepared with available personnel and equipment. As new ways of preparing foods are tried, they can be added to the lists.

Dinner

Meat	Potatoes	Vegetables cooked	Salads	Breads	Desserts
Beef Roast Swiss steak Stuffed flank steak Meat loaf Spanish meat balls Browned beef stew Corned beef Beef patties Meat pie Liver	White Baked Whipped Scalloped Creamed Au gratin Potato cakes Potato puff Boiled in jackets Roast potato	Carrots Buttered Panned Creamed Glazed Carrots O'Brien Carrot scallop Carrot timbales	Cabbage salad Coleslaw Cabbage and apple Cabbage and carrot Cabbage, carrot, raisin Cabbage and green pepper Cabbage and tomato	Bread Enriched Whole wheat Raisin Oatmeal Rye Rolls, all kinds Muffins Plain Prune Bacon Biscuits Baking powder Butter-scotch	Cakes Plain, white Chocolate Gingerbread Dutch apple Cookies Molasses Oatmeal Puddings Baked custard Cornstarch Pastry Cherry tarts Pies

Breakfast

Fruit	Cereals	Eggs	Meat, fish	Breads
Citrus fruit juices	Cooked cereals	Soft cooked or hard cooked	Bacon	Toast
Tomato juice	Oatmeal	Poached	Canadian bacon	Raisin
Orange or grapefruit halves	Farina	Scrambled	Ham	Whole wheat
Stewed prunes	Corn meal mush	Fried	Sausage cake	Muffins
Stewed apricots	Scrapple	Omelet	Link sausage	Bran
Baked apple	Ready-to-eat	French toast	Codfish cakes	Corn meal
Sliced banana	Shredded wheat			Whole wheat
Cantaloup	Wheat flakes			Blueberry
	Corn flakes			Other
				Coffee cake
				Pop-overs
				Griddlecakes

Lunch or Supper

Meat dishes	Other protein dishes	Chowders, soups	Salads	Sandwiches, breads	Desserts
Italian spaghetti	Baked rice, tomatoes, and cheese	Corn and tomato chowder	Stuffed eggs	Sandwiches	Cookies
Creamed chipped beef	Macaroni and cheese	Fish chowder	Sliced eggs with tomato and green pepper	Egg and onion	Ginger
Baked hash	Eggs creole	Soups	Jellied tomato	Meat loaf	Peanut
Beef shortcake	Spanish lima beans	Cream of tomato	Mixed vegetable	Sliced cheese	Date bars
Chile con carne	Bean loaf	Cream of split pea	Mixed fresh fruit	Peanut butter and jelly	Puddings
Baked stuffed peppers	Salmon, cabbage and onion salad	Navy bean	Cranberry and apple	Breads	Bread
	Baked beans	Old-fashioned potato		Spoon bread	Cottage
				Muffins, plain	Prune whip
				Cheese muffins	Fruit
					Fresh fruit cup
					Applesauce
					Melon

Use of left-overs.--In spite of careful planning, the problem of left-overs may arise. When foods have been left over try to fit them into other meals as soon as possible. Even though left-overs lose some food value during storage and reheating, they usually retain enough to make them worth using.

Given below is a chart illustrating some kinds of dishes in which left-overs can be used. When making a chart for a particular institution, it is better to list specific dishes rather than general classifications.

Suggestions for Use of Left-Overs

Cooked meats	Cooked potatoes	Cooked vegetables	Cooked cereals	Bread, cake	Eggs	Milk
Croquettes Meat pie Hash Casserole dishes Sandwich fillings Salads	Creamed Fried Potato cakes Stuffed baked Meat pie Stew Chowder Hash	Soup Meat pie Stew Stuffed peppers Salads	Fried Meat loaf Rice, with tomatoes Croquettes Fondue Macaroni, Noodles Tomatoes Cheese Meat sauce Tuna fish	Bread, dry crumbs Brown betty Breaded chops Soft crumbs Meat loaf Stuffing Cake or cookies Brown betty Ice-box cake	Egg yolks Cakes Pie fillings Salad dressing Egg whites Meringue Cake Puddings Cooked eggs Deviled Creamed Salads Sandwich fillings	Sour milk Cakes Cookies Muffins Cottage cheese Sour cream Cakes Cookies Salad dressing Swiss steak

For a list of publications containing recipes and other material related to food management see page 91.

Table 1.--FOOD PLAN AT LOW COST: Quantities of food (as purchased) for 10 persons for 30 days, for 18 age and activity groups

Family members	Leafy, green, and yellow vegetables 1/	Citrus fruit, tomatoes	Potatoes, sweet-potatoes	Other vegetables and fruits 1/	Milk equivalent 2/ 3/	Meat, poultry, fish	Eggs 3/	Dry beans and peas, nuts	Flour equivalent 4/	Fats, oils 3/	Sugar, sirups, preserves 3/
	Lb.	Lb.	Lb.	Lb.	Gal.	Lb.	Doz.	Lb.	Lb.	Lb.	Lb.
Children through 12 years:											
1-3 years	75	75	40	65	60	5/ 35	22	3	55	6	6
4-6 years	75	75	65	75	60	65	22	6	75	15	15
7-9 years	85	85	110	95	60	95	22	12	95	21	33
10-12 years	95	95	115	110	65	110	22	12	140	39	39
Girls:											
13-15 years	95	95	130	110	70	5/ 115	22	12	150	39	39
16-20 years	95	95	115	110	55	5/ 115	22	12	140	39	33
Boys:											
13-15 years	110	110	160	140	70	115	22	21	190	48	42
16-20 years	115	110	205	150	70	115	22	21	245	63	48
Women:											
Sedentary	95	85	95	110	55	115	22	12	85	33	33
Moderately active	95	85	115	110	55	115	22	12	140	39	39
Very active	110	110	160	115	55	115	22	15	185	48	48
Pregnant	130	110	110	115	80	5/ 140	28	12	110	33	21
Nursing	150	160	160	140	110	5/ 150	28	12	130	33	21
60 years or over	110	95	110	110	55	115	15	6	95	21	21
Men:											
Sedentary	95	85	115	110	55	115	22	12	140	39	39
Physically active	110	110	160	115	55	115	22	15	185	48	48
With heavy work	110	110	245	150	55	115	22	27	335	90	48
60 years or over	110	95	130	110	55	115	15	6	140	33	33

1/ Quantities allow for some fresh and some canned or frozen vegetables and fruits. If large proportions of fresh vegetables and fruits that have a high percentage of refuse--corn on the cob, peas and lima beans in the pod, melons--are used when in season, the total quantities in these groups may need to be increased by as much as 50 to 75 percent during that short period.

2/ Fluid milk or its equivalent in cheese, evaporated milk, or nonfat dry milk (see p. 20). Nonfat dry milk lacks the fat and vitamin A value of fluid whole milk. However, if other groups of food are used in the quantities given in the food plans, nonfat dry milk can make up one-third of the milk equivalent quarts without risk of inadequacy of vitamin A. If more than this quantity of dry milk is used or if the quantities of other foods are changed, the quantities of butter or fortified margarine and leafy, green, and yellow vegetables, especially the dark green leafy and yellow kinds, should be appraised to see that enough have been included.

3/ Quantities given assume purchases of some baked products which include milk, eggs, fat, and sugar. Therefore, in institutions that have their own bake shops, quantities for these groups will need to be increased.

4/ Count 1-2/3 pounds of bread as 1 pound of flour. Use as much as possible in the form of whole-grain, enriched, or restored products (see p. 21).

5/ To meet iron allowance include weekly one large or two small servings of liver or other organ meats.

Table 2.--FOOD PLAN AT MODERATE COST: Quantities of food (as purchased) for 10 persons for 30 days, for 18 age and activity groups

Family members	Leafy, green, and yellow vegetables 1/	Citrus fruit, tomatoes	Potatoes, sweet-potatoes	Other vegetables and fruits 1/	Milk equivalent 2/ 3/	Meat, poultry, fish	Eggs 3/	Dry beans and peas, nuts	Flour equivalent 4/	Fats, oils 3/	Sugar, sirups, preserves 3/
	Lb.	Lb.	Lb.	Lb.	Gal.	Lb.	Doz.	Lb.	Lb.	Lb.	Lb.
Children through 12 years:											
1-3 years	85	85	20	80	65	5/ 45	25	3	55	6	6
4-6 years	95	95	40	110	65	80	29	3	65	18	24
7-9 years	110	110	75	115	70	110	29	6	85	24	36
10-12 years	130	120	95	125	75	140	29	6	120	36	42
Girls:											
13-15 years	140	120	110	150	75	5/ 150	29	6	120	42	42
16-20 years	140	120	110	150	65	5/ 150	29	6	110	36	42
Boys:											
13-15 years	150	130	140	160	75	160	29	12	175	54	54
16-20 years	175	155	180	160	75	180	29	15	230	66	60
Women:											
Sedentary	140	110	85	150	55	150	29	3	75	30	36
Moderately active	140	110	110	150	55	170	29	6	110	42	42
Very active	160	130	130	170	55	170	29	12	160	54	54
Pregnant	175	150	95	140	80	5/ 170	29	6	95	30	30
Nursing	175	195	120	160	115	5/ 170	29	6	110	30	36
60 years or over	150	120	80	140	60	155	22	3	75	30	30
Men:											
Sedentary	140	110	110	150	55	170	29	6	110	42	42
Physically active	160	130	130	170	55	170	29	12	160	54	54
With heavy work	175	155	205	190	55	180	29	15	305	96	60
60 years or over	150	120	110	140	60	150	22	3	110	36	36

See footnotes following table 1.

Figuring Monthly Food Quantities

To figure the quantities of food needed monthly for an institutional group, first select the plan--low-cost or moderate-cost (table 1 or 2, pp. 14 or 16) that best represents the per person money allowance. After selecting the plan:

(1) Determine as accurately as possible the number of individuals in the different age and activity classifications shown in the food plans. If most persons fall in one category, as for example, sedentary adults, one grouping may be used to represent all. In children's institutions, however, careful classification is most important because of wide differences in the nutritional needs of children at various ages.

Include in the count all persons, both residents and employees. A person who eats only one meal a day at the institution will count as one-third person. The tabulation may read:

Age or activity group:	Number in group
Children:	
4-6 years	17
7-9 years	25
10-12 years	30
Girls:	
13-15 years	10
16-20 years	8
Moderately active women	10

(2) Since quantities are given for 10 persons, point off one decimal place in the number for each age or activity group to determine the number of units of 10 persons. For example, in the age group 4-6 years above, the 17 persons will become 1.7 units of 10 persons. Or, use figures for personnel as reported and point off one decimal place in total quantities.

(3) On a work sheet set up with columns similar to the sample on page 18, enter the number of units of 10 persons in each age or activity group. Multiply these figures by the quantities of food suggested in the plan for the particular age or activity group.

(4) Total the figures for each of the 11 food groups. Round to convenient market units. These totals represent the approximate quantities of food needed for a month according to the plan selected. They will furnish an adequate diet if the selection of food within each group follows the customary use of food in this country and each person gets his or her share.

An illustration of the computation of the total quantity of food needed as suggested in the moderate-cost food plan is shown on page 18.

If more convenient, the food plans per person per week (Appendix tables 7 and 9, pp. 41 and 44) or per person per day (Appendix tables 11 and 12, pp. 46 and 48) may be used as a basis for computing quantities.

To use this form, make daily entries as follows:

Column 1 - Date issued.
Column 2 - Kind of food.
Column 3 - Size of unit used; example: 48-ounce package, No. 10 can.
Column 4 - Number of units issued.
Column 5 - Number of pounds used.
(See tables 13 to 34 for information on the quantity of food in common purchase units.)

At the end of the period, the quantities in each food group, except milk and grain products, can be added. They then are ready for comparison with the quantities worked out for the institution from the food plans for the same period.

Converting Dairy Products to Milk Equivalent

In the food plans, the quantity of milk, which includes all milk products except butter, is given in terms of fluid milk equivalent. Therefore, before the quantities used in an institution can be compared with those in the plans, products such as ice cream, cheese, and evaporated milk, must be converted to fluid-milk equivalent. The conversion factors needed are given in table 3.

Table 3.—Factors for converting dairy products (except butter 1/) to milk equivalent 2/

Milk products (1)	Conversion factors for-- Quarts, milk equivalent (2)	Gallons, milk equivalent (3)
Whole milk.....pounds.....	0.47	0.12
.....gallons.....	4.00	1.00
.....quarts.....	1.00	.25
.....half-pints.....	.25	.06
Cottage cheese.....pounds.....	1.40	.35
All other cheese....pounds.....	3.20	.80
Condensed milk.....pounds.....	1.11	.28
Evaporated milk.....pounds.....	.94	.24
.....No. 10 can.....	7.52	1.92
.....No. 14½ ounce can...	.86	.21
Whole dry milk.....pounds.....	3.55	.89
Nonfat dry milk.....pounds.....	4.57	1.14
Ice cream.....pounds.....	.56	.14
.....gallons.....	2.58	.64
20 percent cream....pounds.....	.33	.08
....gallons.....	2.81	.68
40 percent cream....pounds.....	.31	.08
....gallons.....	2.60	.67

1/ Butter is included as a fat in the Fats and Oils group.
2/ Approximately the quantity of fluid milk to which the various milk products are equivalent in terms of minerals and protein.

Following are the steps for converting dairy products to gallons of milk equivalent, with an example showing the computations.

(1) Classify the different types of milk and milk products. Add together the quantities of each of the milk products used during the period. (See items listed in table 3, col. 1.)
(2) Multiply the total of each of the products by the gallon conversion factor to convert them to milk equivalent gallons.
(3) Add the gallons of milk equivalent to give the total milk equivalent gallons. This total can be compared directly with the food plan quantities figured for the institution.

Food (1)	Unit of purchase (2)	Total units used (3)		Conversion factor (4)		Milk equivalent (5)
		Number				Gallons
Milk, fluid.....	Gallon	552	(x)	1.00	(=)	552.00
Milk, evaporated.....	No. 10 can	12	(x)	1.92	(=)	23.04
Cheese, cottage.....	Pound	7	(x)	.35	(=)	2.45
Ice cream.....	Gallon	56	(x)	.64	(=)	35.84
Cheese, cheddar.....	Pound	31	(x)	.80	(=)	24.80
Total milk equivalent, gallons.....						638.13

Converting Baked Products to Flour Equivalent

The quantities suggested in the food plans for flour, cereals, and baked goods are in terms of pounds of flour equivalent. Bread and other baked goods average about 60 percent flour by weight. Therefore, count 1-2/3 pounds of bread or other baked goods used at the institution as equal to 1 pound of flour. To do this quickly, multiply the total pounds of baked products by 0.60. Add this figure to the total for pounds of flour and cereals used. This grand total will be the pounds of flour equivalent, which can be compared with the quantities given in the plans. An example is given below:

Food	Total used		Conversion factor		Flour equivalent
	Pounds				Pounds
Baked goods.....	600	(x)	0.60	(=)	360
Flour and cereals.....	700	(x)	1.00	(=)	700
Total flour equivalent, pounds.....					1,060

Planning Food Needs in Advance

The food plans can be used for estimating future purchases by multiplying the quantities of each of the groups needed for 1 month by the number of months for which purchases are to be made. Estimates then can be made of the proportion of

Recipe Method for Computing Food Costs

Estimates of the cost of individual recipes can be useful in meal planning or for day-to-day control of costs. Knowing recipe costs can aid in combining foods so that the total cost per day or per week will fall within a desired range. Food costs on a recipe basis will show up expensive dishes desirable only for occasional use.

To calculate the cost of a recipe, multiply the quantity of each ingredient used by the unit cost and add the resulting figures. For the cost per portion, divide the total by the estimated number of servings the recipe will yield. A form for a simple record card illustrating this method for obtaining recipe costs is shown below. Similar cards can be set up to compute the cost per serving of such foods as bread, frankfurters, and butter or margarine, which are often served in the form in which they are purchased.

Unless the actual number of servings from a recipe is approximately the same as the estimated number, the calculated cost per serving will not accurately represent the cost of the food used. Therefore, the size of portions should be checked periodically. The use of standardized spoons or scoops (Appendix E, p. 89) will help in obtaining servings of the desired quantity.

In a period of rapidly changing prices, the cost of recipes must be recalculated frequently to keep information up-to-date. However, a record of such recalculations can be extremely valuable as a permanent reference.

Sample Recipe Cost Record

Meat loaf — Portion: 4 ounces

	100 portions	Cost per unit 1/	Cost
Beef, ground.....	16 pounds	$0.520 per pound	$8.320
Pork, ground.....	5 pounds	.540 per pound	2.700
Salt.....	½ cup	.033 per pound	.010
Onion, chopped.....	1½ cups	.075 per pound	.038
Bread crumbs, coarse, dry..	1½ gallons	.120 per pound	.600
Eggs, beaten.....	10	.590 per dozen	.492
Milk.....	1½ quarts	.190 per quart	.285
Tomato juice.....	1½ quarts	.483 per No. 10 can	.242
Total cost of recipe.....			$12.687
Cost per portion.....			.1269

1/ September 1950 prices.

Estimating daily food cost from recipe cost.--A rough estimate of daily costs for food can be made very quickly after recipe costs have been computed. Add together the cost per portion of each food served on the menu during 1 day. This total will represent roughly the per person per day cost of that particular combination of foods. Multiplying this cost by the number of persons served will give an estimate of the total food cost for that day.

Inventory Method of Computing Food Costs

The simplest method of computing cost is to keep a record of food used during a period of a week or a month. The cost is computed by multiplying the number of units of each food used by unit cost and adding to obtain total cost. If cost per person is desired, divide total cost by number of persons fed. For per day cost divide by the number of days in the period.

Monthly inventory.--For a monthly inventory, a beginning inventory of the quantity and cost of all food on hand is taken. All purchase slips are kept and entries are made periodically on summary records. At the end of the month another inventory is made of the quantity and cost of food on hand. The ending inventory each time becomes the beginning inventory for the next period. The cost of food per day can be computed as shown below. (This is only an example. It is not intended to represent actual cost for any particular type of institution.)

Beginning inventory, March 1.....	$144.50	
Cost of food purchased during March.....	325.40	
Total.....		$469.90
Ending inventory, April 1.....	$105.25	
Cost of food used during March.....		$364.65
Number of person days during March, 496		
Cost per person per day ($364.65 ÷ 496)		$ 0.735

If information is desired about groups of food--for example, the amount spent on milk products--separate record sheets are used for each food group. At the end of the period, the total quantity as well as cost of food in each group is transferred to a summary record and totals are computed.

Perpetual inventory.--For an institution with a staff large enough to have at least one person responsible for issuing food, the perpetual inventory is a desirable form for keeping records of the quantity and cost of food used.

To start a perpetual inventory, cards similar to the form illustrated below can be set up for each food.

Suggested Perpetual Inventory Form

Tomatoes, whole, canned No. 10 can (Reorder at 10)

Purchased				Issued				
Date	Brand	Quantity	Unit price	Date	Brand	Quantity	Total value	Left in stock
		Number	Dollars			Number	Dollars	Number
10-25-'50	BBB	36	0.72	11-25-'50	BBB	6	4.32	30
				11-30-'50	BBB	6	4.32	24

A careful and complete inventory should then be taken and quantities and unit cost of all foods on hand entered on the cards. After this has been done, every purchase should be recorded, as well as the quantity of each food issued. Purchases may be recorded daily or weekly. It is advisable to record food issued at the time of issue or to use requisition slips made out in duplicate.

At the end of a specified period, totals taken from these records will show the quantity of food used and its cost. From this, the cost per person can be computed.

Generally it is a good practice to retake a complete inventory at certain intervals, at least once a year or more often if possible. This will provide a check on errors and loss through pilferage or spoilage.

Estimating the Cost of Food Plan Quantities

At times it may be desirable to know about how much will have to be spent by an institution to provide the quantities of food suggested in the low- and moderate-cost plans. A rough estimate of the cost can be obtained in the following manner.

(1) Using current institutional records, figure the average cost per pound per food group by dividing the total amount spent for each group for a specified period (at least a month) by the total pounds of that group purchased during the same period. For milk and milk products, and flour, cereals, and baked goods, divide the total amount spent by milk- and flour-equivalent pounds. (See page 21 for method for figuring equivalents.)

(2) Using the quantities needed by the institution according to the food plan (p. 17), multiply the pounds for each food group by the average cost per pound for the respective group as figured in (1).

(3) Add the costs for all groups.

This method of estimating the cost of food needed according to the plan reflects the purchasing practices of the institution. If foods too expensive for the ration allowance have been used, the average cost per pound food group will be higher than necessary. Therefore the total estimate may be higher also than if good buying practices had been followed.

APPENDIX A. DIETARY ALLOWANCES

Table 4.--Recommended daily dietary allowances 1/

Family members	Food energy	Protein	Calcium	Iron	Vitamin A	Thiamine	Ribo-flavin	Niacin	Ascorbic acid	Vitamin D
Children through 12 years:	Cal.	Gm.	Gm.	Mg.	I.U.	Mg.	Mg.	Mg.	Mg.	I.U.
Under 1 year.....	2/	3/	1.0	6	1,500	0.4	0.6	4	30	400
1-3 years (27 pounds).....	1,200	40	1.0	7	2,000	.6	.9	6	35	400
4-6 years (42 pounds).....	1,600	50	1.0	8	2,500	.8	1.2	8	50	400
7-9 years (58 pounds).....	2,000	60	1.0	10	3,500	1.0	1.5	10	60	400
10-12 years (78 pounds)....	2,500	70	1.2	12	4,500	1.2	1.8	12	75	400
Girls:										
13-15 years (108 pounds)...	2,600	80	1.3	15	5,000	1.3	2.0	13	80	400
16-20 years (122 pounds)...	2,400	75	1.0	15	5,000	1.2	1.8	12	80	400
Boys:										
13-15 years (108 pounds)...	3,200	85	1.4	15	5,000	1.5	2.0	15	90	400
16-20 years (144 pounds)...	3,800	100	1.4	15	6,000	1.7	2.5	17	100	400
Women (123 pounds):										
Sedentary.....	2,000	60	1.0	12	5,000	1.0	1.5	10	70	4/
Moderately active.....	2,400	60	1.0	12	5,000	1.2	1.5	12	70	4/
Very active.....	3,000	60	1.0	12	5,000	1.5	1.5	15	70	4/
Pregnancy (latter half)....	5/ 2,400	85	1.5	15	6,000	1.5	2.5	15	100	400
Lactation.....	3,000	100	2.0	15	8,000	1.5	3.0	15	150	400
Men (154 pounds):										
Sedentary.....	2,400	70	1.0	12	5,000	1.2	1.8	12	75	4/
Physically active.....	3,000	70	1.0	12	5,000	1.5	1.8	15	75	4/
With heavy work.....	4,500	70	1.0	12	5,000	1.8	1.8	18	75	4/

1/ Source: Recommended Dietary Allowances, National Research Council Reprint and Circular Series No. 129, revised 1948. Some minerals and vitamins, such as phosphorus and folic acid, that are not listed are known to be needed also. Present knowledge indicates that these will be supplied in sufficient quantities by food combinations that provide the recommended quantities of the nutrients listed.

2/ 110 calories/2.2 pounds (1 kg.) body weight at 6 months. (Energy requirements are 120 calories/2.2 pounds in early infancy and 100 calories/2.2 pounds at 1 year.)

3/ 3.5 grams/2.2 pounds (1 kg.) body weight.

4/ For persons who have no opportunity for exposure to sunshine and for elderly persons, the ingestion of small amounts of vitamin D may be desirable.

5/ The value of 2,400 calories represents the allowance for pregnant, sedentary women. For more active pregnant women, additional calories may be needed.

APPENDIX B

Comparison of Food Groupings

Frequently questions arise concerning different food groupings such as those in the National Food Guide, those in food plans developed by the Bureau of Human Nutrition and Home Economics, and those used by the Armed Forces (p. 29). Fundamentally, all groupings combine foods on the basis of similarity in nutritive value and use in meals. They differ chiefly in the number of groups into which foods are classified, the number depending on the purpose for which the classification is intended.

The National Food Guide was developed as a simple device to help in the daily selection of meals, whether eaten at home or eaten out, that include all the different types of food basic to an adequate diet. Individual foods are classified into seven groups according to their major contribution to the nutritive content of the diet in terms of protein, vitamins, and minerals. These seven groups do not include additional foods used chiefly for food energy, such as sugar, sirups, preserves, fats other than butter and margarine, and unenriched cereal products. This guide was not intended to be used as an aid in planning total quantities of food needed for a nutritionally adequate diet.

In classifying foods into groups from which plans can be developed for food quantities for diets that are both nutritionally adequate and conform to generally accepted meal patterns, all commonly used foods must be included. This has been done in the groupings in the food plans of the Bureau of Human Nutrition and Home Economics. The butter and margarine group of the Basic 7 is expanded to include all fats and oils. All grain products, enriched and unenriched, are grouped together. Sugar, sirups, and preserves are included as a group. For further convenience in planning, the protein rich foods, which the Basic 7 classifies together, are divided into three groups—meat, poultry, fish; eggs; and dry beans and peas, nuts. Potatoes and sweetpotatoes are put into a group by themselves, making a total of 11 groups. With a classification of this type it is possible to develop nutritionally adequate food quantities that are flexible and that include all foods commonly used in American diets.

The classification used by the Armed Forces is similar to the one used in the Bureau of Human Nutrition and Home Economics food plans in that it includes all foods. However, it is based on the components of the military ration and therefore uses 15 instead of 11 groupings. The Citrus Fruit and Tomatoes group used in the Bureau's plans has been divided into two groups, Other Vegetables and Fruits into three groups, and Fats and Oils into two groups.

Comparison of Food Groupings Used in the National Food Guide, Bureau of Human Nutrition and Home Economics, and the Armed Forces

National Food Guide (Basic 7)	BHNHE Food Plan Groups	Armed Forces 1/
1. Leafy, green, yellow vegetables	1. Leafy, green, and yellow vegetables	1. Vegetables, leafy green and yellow
		2. Citrus fruit
2. Citrus fruit, tomatoes	2. Citrus fruit, tomatoes	3. Tomatoes
	3. Potatoes, sweetpotatoes	4. Potatoes, sweet and white
3. Potatoes, other vegetables and fruits		5. Vegetables, other
	4. Other vegetables and fruits	6. Fruits, other than citrus
		7. Fruits, dried
4. Milk, cheese, ice cream	5. Milk, cheese, ice cream	8. Milk and milk products
5. Meat, poultry, fish	6. Meat, poultry, fish	9. Meat, fish, and poultry
Eggs	7. Eggs	10. Eggs
Dried beans and peas, nuts	8. Dry beans and peas, nuts	11. Legumes, dry, and nuts
6. Bread, flour, cereals (whole grain or enriched)	9. Flour, cereals, baked goods	12. Cereal and cereal products
		13. Butter
7. Butter and fortified margarine	10. Fats, oils	14. Fats, other
	11. Sugar, sirups, preserves	15. Sugar and sirups
Other foods not in Basic 7:		
Other fats		
Unenriched cereals and baked goods		
Sugar, sirups, preserves		

1/ This classification of food groups is based on the one used by Berryman and Chatfield and later Berryman and Howe for their short method of calculating the nutritive value of Army diets.

APPENDIX C

Short Method for Computing Nutritive Value of Diets

The nutritive value of diets may be estimated quickly by using the per pound nutritive values for the food groups shown in table 5, together with the quantities of food issued per person per day from these groups. The method is given on page 31. The adequacy of the diet then may be evaluated by comparing these estimates with the daily dietary allowances recommended by the National Research Council. When a comparison of this kind is made, certain basic facts should be kept in mind.

The recommended allowances are for the nutrients from food actually eaten, whereas the per pound nutritive values are for food in the form in which it is purchased. Although allowance has been made for some refuse and for some nutrient losses in food preparation and cooking, the per pound values are based on the assumption that the food is of good quality and the best methods of preparation and cooking are used. They do not take into account additional losses that occur when refuse is excessive because of poor quality, careless handling, improper storage, or excessive waste in peeling; nor will they cover losses occuring when food is poorly cooked, held on a steam table, or reheated for serving. They include no allowance for plate waste.

In apportioning the individual foods within each food group for the development of per pound nutritive values, dietary patterns common in the United States were followed. The percent distribution of individual foods within the different groups is given in table 6 . In working out these percentages, the quantities used in most cases were based on nation-wide averages for a year and so do not reflect seasonal or regional patterns of food use. It is probable, therefore, that in a particular institution the proportions will be somewhat different. However, if they are not too divergent, the per pound values as given will be satisfactory to use in evaluating the nutritional adequacy of the institution's food.

If the proportions are quite different, that fact should be kept in mind in applying the per pound values to the institution's food group quantities. For example, the per pound values for the Citrus Fruit and Tomatoes group are based on the use of 62 percent citrus fruit and 38 percent tomatoes. As larger and larger percentages of tomatoes and correspondingly smaller percentages of citrus fruit are used, these per pound values will increasingly overestimate the vitamin C in the diet.

Because of the variables discussed above, the calculated values should be used only as a rough guide in appraisal of diets. To allow fully for these variables, calculated values probably should be at least 10 percent above the recommended allowances for calories, and margins for other nutrients should be liberal. Better data on actual practices are needed on which to base recommendations for the margins to be allowed in different situations.

Estimating the nutritive value of diets.--To figure the nutritive value of diets from per pound food group values, follow the procedure given below.

A. Figure the pounds of each food group used per person per day. Convert milk products to milk equivalent gallons or quarts (see p. 20) and then multiply by 8.60 or 2.15 respectively, to obtain milk equivalent pounds. Convert baked products to flour equivalent pounds (see p. 21).

B. Multiply the quantities obtained in (a) by the nutritive value per pound (table 5) for the respective group, as shown on page 38.

C. Add the quantities of each nutrient. These totals will represent the nutrients available per person per day from the food used.

Computing average daily dietary allowances for an institution.--In some institutions the age or activity of the residents may fall chiefly into one classification such as "sedentary" women. In this case, dietary allowances suggested for one activity group may be used for comparisons between nutrients from food and daily requirements. On the other hand, when the age or activity of the residents differ greatly, which may be the case in a children's home, one age or activity classification will not be representative. In this case another computation is necessary.

A. Estimate the number of persons in each age or activity group. For example, there may be 17 children in the 4 to 6 year group, 25 in the 7 to 9 year group, and so on.

B. Multiply the number of persons in each group by the recommended dietary allowance for the respective group.

C. Add the quantity of each nutrient obtained in "B" and divide by the total number of residents to get the average quantity of each nutrient per person per day.

A sample work sheet illustrating the computations is shown on page 39.

Table 5.--Nutritive value per pound of food groups 1/

Item	Food energy	Protein	Fat	Carbo-hydrate	Calcium	Iron	Vitamin A value	Thiamine	Ribo-flavin	Niacin	Ascorbic acid
	Cal.	Gm.	Gm.	Gm.	Mg.	Mg.	I. U.	Mg.	Mg.	Mg.	Mg.
Leafy, green, and yellow vegetables 2/.	115	7	0.9	24.1	170	3.6	9,900	0.15	0.19	1.3	54
Citrus fruit, tomatoes 2/.....	150	4	1.1	35.9	70	1.8	2,100	.23	.12	1.7	129
Potatoes, sweetpotatoes 2/.....	335	8	.6	76.8	50	2.7	3,500	.30	.13	3.4	43
Other vegetables and fruits 2/.....	205	4	1.3	49.9	70	2.0	1,300	.12	.13	1.3	26
Milk equivalent 2/.....	300	16	17.1	20.9	530	.4	700	.14	.75	.5	5
Meat, poultry, fish 2/.....	935	65	73.1	.5	60	9.7	1,400	.75	.82	16.8	4
Eggs.....	655	52	46.5	2.8	220	10.9	4,600	.33	1.11	.3	0
Dry beans and peas, nuts 2/.....	2,005	102	99.4	202.9	560	23.0	100	2.40	.89	28.4	5
Flour, cereals, baked goods 3/ 4/..... (flour equivalent)	1,975	56	22.7	386.9	390	12.2	100	1.35	1.10	12.2	Trace
Fats, oils 3/ 4/.....	3,340	10	363.3	7.5	40	1.5	5,600	.19	.13	2.0	0
Sugar, sirups, preserves 3/.....	1,750	4	1.1	412.1	40	2.1	0	.01	.03	.2	5

Use the following values for Flour Equivalent and Fats and Oils if most of the baked products including bread are produced at the institution

Flour, cereals 2/.....	1,655	47	5.7	346.5	80	9.3	100	1.18	.72	9.8	0
Fats, oils 2/.....	3,565	11	392.5	1.4	30	1.0	3,700	.19	.13	2.2	0

1/ Values based on Composition of Foods, Agriculture Handbook No. 8, except for those of the last three groups listed, which are based on Tables of Food Composition in Terms of Eleven Nutrients, Misc. Pub. No. 572. Some allowance has been made for loss of nutrients during cooking. See page 33 for percentage distribution of foods used in calculations.

2/ Selection and quantities of individual foods within these groups are based on estimates of the United States Per Capita Food Supply for 1948 made by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

3/ Selection and quantity of individual foods in these groups are based on patterns of use presented in Nutritive Value of Diets of Urban Families, U. S. Spring 1948 and Comparison with Diets in 1942, Preliminary Report No. 12.

4/ Selection of individual foods within these groups are based on the assumption that most baked products are purchased.

Table 6.--Percentage distribution of foods used in calculating the nutritive value per pound of food group

Food item	Percentage distribution
Leafy, green, and yellow vegetables: 1/	
Fresh:	
Artichokes, globe	0.18
Asparagus	1.75
Beans, lima, green	.88
Beans, snap	8.72
Broccoli	1.34
Brussels sprouts	.12
Cabbage	28.15
Carrots	11.13
Collards	2.15
Kale	.18
Lettuce and escarole	16.33
Okra	.65
Peas, green	5.55
Peppers	2.02
Pumpkin	.20
Spinach	3.79
Squash, winter	1.36
Turnip greens	.78
Canned:	
Asparagus	.87
Beans, lima	.35
Beans, snap	2.71
Carrots	.35
Peas	5.08
Pumpkin and squash	.53
Spinach	.80
Baby foods:	
Carrots	.61
Peas	.62
Spinach	.61
Frozen:	
Asparagus	.13
Beans, lima	.35
Beans, snap	.26
Broccoli	.15
Brussels sprouts	.07
Carrots and carrots and peas	.09
Peas, green	.84
Pumpkin and squash	.04
Spinach	.26
Total	100.00

Food item	Percentage distribution
Citrus fruit, tomatoes: 1/	
Citrus fruit:	
Fresh:	
Grapefruit	11.01
Lemons	3.98
Limes	.09
Oranges	31.89
Tangerines	1.42
Canned:	
Citrus concentrates	1.80
Citrus juice combination	2.18
Grapefruit juice	3.61
Grapefruit segments	.95
Lemon juice	.09
Orange juice	4.74
Tangerine juice	.09
Tomatoes:	
Fresh:	
Tomatoes	24.68
Canned:	
Catsup and chili sauce	2.09
Paste, puree and sauce	2.18
Soup	2.28
Tomato juice	2.75
Whole and pulp	4.17
Total	100.00
Dry beans, peas, soya flour, nuts: 1/	
Beans, including limas	48.42
Peas	4.40
Soya flour, flakes, grits:	
Low fat	1.26
Full fat	3.14
Nuts:	
Almonds, shelled	1.89
Coconut, dry shredded	4.40
Filberts, shelled	.63
Peanuts, shelled	29.56
Pecans, shelled	1.89
Treenuts, shelled	2.52
Walnuts, shelled	1.89
Total	100.00

See footnotes on page 37.

Table 6.--Percentage distribution of foods used in calculating the nutritive value per pound of food group--Continued

Food item	Percentage distribution
Other vegetables and fruits: 1/	
Other vegetables:	
Fresh:	
Beets	1.70
Cauliflower	1.48
Celery	4.53
Corn, sweet	5.53
Cucumbers	1.70
Eggplant	.17
Onions	9.91
Parsnips	.32
Radishes	.58
Rhubarb	.31
Squash, summer	.67
Turnips and rutabagas	2.76
Canned:	
Beets	1.55
Corn	3.16
Pickles, cucumbers	1.48
Sauerkraut	.48
Soups (other than tomato)	2.09
Vegetable juice	.57
Frozen:	
Corn	.17
Other fruits:	
Fresh:	
Apples	11.64
Apricots	.26
Avocados	.13
Bananas	8.10
Cherries	.39
Cranberries	.13
Grapes	2.53
Melons:	
Cantaloup	4.75
Watermelon	9.89
Peaches	5.44
Pears	2.44
Pineapple	.30
Plums and prunes	1.00
Strawberries	.87
Other vegetables and fruits: 1/--Con.	
Canned fruit and fruit juices:	
Apple juice	0.13
Apples and applesauce	.87
Apricots	.48
Berries	.09
Berry juice	.26
Cherries	.48
Cranberries	.30
Figs	.04
Fruit cocktail	.91
Fruit nectar	.13
Grape juice	.26
Olives	.13
Peaches	2.00
Pears	.48
Pineapple juice	1.05
Pineapple	1.13
Plums and prunes	.35
Prune juice	.35
Baby food:	
Apples	.48
Frozen:	
Blueberries	.28
Peaches	.70
Strawberries	.29
Dried:	
Apples	.09
Apricots	.04
Dates	.13
Figs	.13
Peaches	.04
Prunes	.48
Raisins and currants	.87
Total	100.00
Potatoes, sweetpotatoes:	
Potatoes, white	88.82
Sweetpotatoes	10.83
Sweetpotatoes, canned	.35
Total	100.00

See footnotes on page 37.

Table 6.--Percentage distribution of foods used in calculating the nutritive value per pound of food group--Continued

Food item	Percentage distribution
Meat, poultry, fish: 1/	
Meat, carcass:	
Beef	31.72
Lamb and mutton	2.79
Pork, lean meat	28.05
Veal	5.45
Offals, edible	6.52
Poultry:	
Chicken, dressed	14.37
Turkey, dressed	2.85
Game	1.27
Fish:	
Fresh and frozen (dressed basis).	3.17
Shellfish, without shells	.95
Cured	.51
Canned:	
Mackerel	.51
Salmon	.89
Sardines	.38
Shrimp	.06
Tuna	.51
Total	100.00
Eggs:	
Eggs	100.00
Flour, cereals: 1/	
Flour:	
Wheat patent:	
Enriched	47.42
Unenriched	25.55
Whole wheat	1.80
Buckwheat	.29
Rye, light	.93
Corn meal:	
White, whole grain	4.46
Yellow, degerminated	4.41
Cornstarch	.99
Flour, cereals: 1/--Con.	
Cereals and cereal products:	
Barley	0.99
Corn cereals, restored	1.39
Farina, enriched	.99
Hominy grits	.81
Macaroni, spaghetti	3.83
Oatmeal	2.26
Rice	2.84
Shredded wheat	1.04
Total	100.00
Fats and oils: 1/	
Bacon	19.88
Butter	15.53
Lard and other shortening	34.31
Margarine, fortified	9.48
Salad and cooking oil	10.87
Salt pork	9.93
Total	100.00
Fats and oils: 2/	
Bacon	18.54
Butter	20.69
Lard and other shortening	20.69
Margarine, fortified	15.92
Mayonnaise	7.87
Salad and cooking oil	5.57
Salad dressing	6.98
Salt pork	3.74
Total	100.00
Sugar, sweets: 2/	
Sugar	58.85
Sirups, molasses, honey	8.64
Other sweets 3/	32.51
Total	100.00

See footnotes on page 37.

Table 6.--Percentage distribution of foods used in calculating the nutritive value per pound of food group--Continued

Food item (1)	Percentage distribution (as purchased) (2)	Pound conversion factors (3)	Converted distribution 4/ (4)
Flour, cereal, baked goods: 2/			
Flour and other cereal products:			
White flour	21.86	1.00	21.86
Other flour and flour mixes	3.46	1.00	3.46
Corn meal	5.30	1.00	5.30
Cereals, uncooked 5/	8.33	1.00	8.33
Other grain products 6/	10.82	1.00	10.82
Baked products:			
Bread	37.18	.60	22.31
Other baked goods 7/	13.05	.60	7.83
Total, as purchased	100.00		
Total, converted			79.91
Milk, cream, cheese: 1/			
Milk:			
Fluid milk	69.99	1.00	69.99
Buttermilk, skim milk including skim milk used in chocolate drinks.	15.64	1.00	15.64
Evaporated and condensed unsweetened	5.74	2.02	11.59
Condensed sweetened	.15	2.38	.36
Dry skim and buttermilk	.76	9.83	7.47
Dry whey	.05	9.83	.49
Dry whole	.07	7.64	.53
Malted	.05	9.83	.49
Cream, 25 percent	2.80	.70	1.96
Cheese:			
Cheddar	1.58	6.88	10.87
Cottage	.65	3.00	1.95
Ice cream:			
Whole milk	1.14	1.00	1.14
35 percent cream	1.09	.66	.72
Frozen malted and custard	.05	1.20	.06
Ice milk	.12	1.20	.14
Sherbert	.12	1.20	.14
Total, as purchased	100.00		
Total, converted			123.54

See footnotes on page 37.

Footnotes for table 6.—Percentage distribution of foods used in calculating the nutritive value per pound of food group

1/ Weights are based on pounds of food items within the food group as estimated in April 1949 for 1948 United States Per Capita Food Supply.

2/ Weights are based on average pounds of food items within the food group consumed per household per week by urban families in the United States in Spring 1948.

3/ Includes candy, jelly, jam, preserves, and prepared dry desserts.

4/ Percentage distribution figure multiplied by pound conversion factor, represents flour equivalent of baked products and fluid milk equivalent of milk products. The totals in column 4 are used in obtaining average nutritive value per pound flour and milk equivalents.

5/ Includes grits, rice, oatmeal, cornstarch, tapioca and the dry cereals.

6/ Includes ready-to-eat cereals, macaroni, spaghetti, noodles.

7/ Includes buns, cakes, cookies, pies, etc. The conversion factor 0.60 is an average factor for these products.

Sample Work Sheet for Computation of the Average Quantity of Nutrients per Person per Day, Based on per Pound Food Group Values 1/

Food group	Quantity of food 2/	Food energy	Protein	Calcium	Iron	Vitamin A value	Thiamine	Ribo-flavin	Niacin	Ascorbic acid
	Lb.	Cal.	Gm.	Mg.	Mg.	I. U.	Mg.	Mg.	Mg.	Mg.
Leafy, green, and yellow vegetables.	0.406	47	2.8	69	1.46	4,019	0.06	0.08	0.5	22
Citrus fruit, tomatoes.....	.374	56	1.5	26	.67	785	.09	.04	.6	48
Potatoes, sweetpotatoes.....	.283	95	2.3	14	.76	990	.08	.04	1.0	12
Other vegetables and fruits.....	.423	87	1.7	30	.85	550	.05	.05	.5	11
Milk equivalent 3/ 4/.....	1.984	595	31.7	1,052	.79	1,389	.28	1.49	1.0	10
Meat, poultry, fish.....	.424	396	27.6	25	4.11	594	.32	.35	7.1	2
Eggs 5/.....	.144	94	7.5	32	1.57	662	.05	.16	Trace	0
Dry beans and peas, nuts.....	.018	36	1.8	10	.41	2	.04	.02	.5	Trace
Flour, cereal, baked goods 6/..... (flour equivalent)	.333	658	18.6	130	4.06	33	.45	.37	4.1	Trace
Fats and oils.....	.104	347	1.0	4	.16	582	.02	.01	.2	0
Sugar, sirups, preserves.....	.125	219	.5	5	.26	0	Trace	Trace	Trace	1
Total.....	4.618	2,630	97.0	1,397	15.10	9,606	1.44	2.61	15.5	106

1/ See table 5, page 32.
2/ These per person per day quantities are based on figures given in the sample on page 18.
3/ See table 3, page 20 to figure milk equivalent gallons.
4/ See table 20, page 69 to figure pounds per gallon of milk.
5/ See table 27, page 77 to figure weight per dozen of eggs.
6/ See page 21 to figure flour equivalent.

Sample Work Sheet for Computation of Average Dietary Allowances for an Institution 1/

Age and activity group	Units	Food energy	Protein	Calcium	Iron	Vitamin A	Thiamine	Ribo-flavin	Niacin	Ascorbic acid
	No.	Cal.	Gm.	Gm.	Mg.	I.U.	Mg.	Mg.	Mg.	Mg.
Children through 12 years:										
4-6 years.....	17	27,200	850	17.0	136.0	42,500	13.6	20.4	136	850
7-9 years.....	25	50,000	1,500	25.0	250.0	87,500	25.0	37.5	250	1,500
10-12 years.....	30	75,000	2,100	36.0	360.0	135,000	36.0	54.0	360	2,250
Girls:										
13-15 years.....	10	26,000	800	13.0	150.0	50,000	13.0	20.0	130	800
16-20 years.....	8	19,200	600	8.0	120.0	40,000	9.6	14.4	96	640
Moderately active women.....	10	24,000	600	10.0	120.0	50,000	12.0	15.0	120	700
Total.....	100	221,400	6,450	109.0	1,136.0	405,000	109.2	161.3	1,092	6,740
Average per person, per day.....	1	2,214	64.5	1.09	11.36	4,050	1.09	1.61	10.9	67
Nutrients from food "as purchased" per person per day. 3/	1	2,630	97.0	2/ 1.40	15.10	9,606	1.44	2.61	15.5	106

1/ Same age and activity grouping as illustrated on page 18.
2/ 1,000 milligrams equals 1 gram.
3/ Based on moderate-cost food plan quantities. See page 18.

APPENDIX D

Low- and Moderate-cost Food Plans, Per Person Per Week and Per Day; Number of Servings Per Person Per Week

Included in this section are low- and moderate-cost food plan quantities per person per week and per person per day (tables 7, 9, 11, 12, pp. 41, 44, 46, and 48). These quantities are based on the same data as those given for 10 persons for 30 days, tables 1 and 2.

Tables 8 and 10 give the number of servings of a specified weight (ready-to-serve basis) that can be obtained per person per week from the quantities suggested for vegetables, fruits, meat, poultry, and fish in the low- and moderate-cost food plans. Because foods in the other groups are generally used in cooking, servings per week are not designated.

These estimates of the number of servings on a ready-to-serve basis take into account average amounts of refuse usually discarded in the preparation of food and make some allowance for shrinkage of meat, poultry, and fish during cooking.

Serving sizes are shown in the table. Where a range in the number of servings is given, the first is for the youngest age classification or for the less active. For pregnant and nursing women, the first is for pregnant and the second for nursing women.

To figure quantities of food needed for an institution according to the daily or weekly food plan:

(1) Determine as accurately as possible the number of individuals in each of the age and activity classifications shown in the food plan. Enter these on a work sheet similar to the sample on page 18.

(2) Multiply the number of persons by the quantity (number of pounds, quarts, or dozens) suggested for each food group in the plan for the respective age and activity groups. Enter on the work sheet.

(3) Add the resulting figures for each of the 11 food groups. These totals represent the approximate quantities of food for a day or a week according to the plan selected.

If quantities of food used in the institution are to be compared with the quantities needed daily or weekly as computed above, the institution's quantities also will have to be on a daily or weekly per person basis. To figure quantities used per person per day or week from quantities used in a month:

(1) Multiply the number of persons fed per day by the number of days in the month (16 persons x 31 days = 496 person days).

(2) Divide the monthly quantities of each food group used at the institution by the person days to obtain quantities used per person per day (195 pounds ÷ 496 = 0.393 pound per person per day).

(3) To obtain weekly quantities, multiply quantities per person per day in (2) by 7 (0.393 pound x 7 = 2.75 pounds per person per week).

Table 7.--FOOD PLAN AT LOW COST: Quantities of food (as purchased) for 1 person for 7 days for 18 age and activity groups

Family members	Leafy, green, and yellow vegetables 1/	Citrus fruit, tomatoes	Potatoes, sweet-potatoes	Other vegetables and fruits 1/	Milk equivalent 2/ 3/	Meat, poultry, fish	Eggs 3/	Dry beans and peas, nuts	Flour equivalent 4/	Fats, oils 3/	Sugar, sirups, preserves 3/
	Lb. Oz.	Lb. Oz.	Lb. Oz.	Lb. Oz.	Qt.	Lb. Oz.	No.	Lb. Oz.	Lb. Oz.	Lb. Oz.	Lb. Oz.
Children through 12 years:											
1-3 years	1 - 12	1 - 12	1 - 0	1 - 8	5½	5/ 0 - 12	6	0 - 1	1 - 4	0 - 2	0 - 2
4-6 years	1 - 12	1 - 12	1 - 8	1 - 12	5½	1 - 8	6	0 - 2	1 - 12	0 - 6	0 - 6
7-9 years	2 - 0	2 - 0	2 - 8	2 - 4	5½	2 - 4	6	0 - 4	2 - 4	0 - 8	0 - 12
10-12 years	2 - 4	2 - 4	2 - 12	2 - 8	6	2 - 8	6	0 - 4	3 - 4	0 - 14	0 - 14
Girls:											
13-15 years	2 - 4	2 - 4	3 - 0	2 - 8	6½	5/ 2 - 12	6	0 - 4	3 - 8	0 - 14	0 - 14
16-20 years	2 - 4	2 - 4	2 - 12	2 - 8	5	5/ 2 - 12	6	0 - 4	3 - 4	0 - 14	0 - 12
Boys:											
13-15 years	2 - 8	2 - 8	3 - 12	3 - 4	6½	2 - 12	6	0 - 8	4 - 8	1 - 2	1 - 0
16-20 years	2 - 12	2 - 8	4 - 12	3 - 8	6½	2 - 12	6	0 - 8	5 - 12	1 - 8	1 - 2
Women:											
Sedentary	2 - 4	2 - 0	2 - 4	2 - 8	5	2 - 12	6	0 - 4	2 - 0	0 - 12	0 - 12
Moderately active	2 - 4	2 - 0	2 - 12	2 - 8	5	2 - 12	6	0 - 4	3 - 4	0 - 14	0 - 14
Very active	2 - 8	2 - 8	3 - 12	2 - 12	5	2 - 12	6	0 - 6	4 - 4	1 - 2	1 - 2
Pregnant	3 - 0	2 - 8	2 - 8	2 - 12	7½	5/ 3 - 4	8	0 - 4	2 - 8	0 - 12	0 - 8
Nursing	3 - 8	3 - 12	3 - 12	3 - 4	10½	5/ 3 - 8	8	0 - 4	3 - 0	0 - 12	0 - 8
60 years or over	2 - 8	2 - 4	2 - 8	2 - 8	5	2 - 12	4	0 - 2	2 - 4	0 - 8	0 - 8
Men:											
Sedentary	2 - 4	2 - 0	2 - 12	2 - 8	5	2 - 12	6	0 - 4	3 - 4	0 - 14	0 - 14
Physically active	2 - 8	2 - 8	3 - 12	2 - 12	5	2 - 12	6	0 - 6	4 - 4	1 - 2	1 - 2
With heavy work	2 - 8	2 - 8	5 - 12	3 - 8	5	2 - 12	6	0 - 10	7 - 12	2 - 2	1 - 2
60 years or over	2 - 8	2 - 4	3 - 0	2 - 8	5	2 - 12	4	0 - 2	3 - 4	0 - 12	0 - 12

1/ Quantities allow for some fresh and some canned or frozen vegetables and fruits. If large proportions of fresh vegetables and fruits that have a high percentage of refuse--corn on the cob, peas and lima beans in the pod, melons--are used when in season, the total quantities in these groups may need to be increased by as much as 50 to 75 percent during that short period.

2/ Fluid milk or its equivalent in cheese, evaporated milk, or nonfat dry milk (see p. 20). Nonfat dry milk lacks the fat and vitamin A value of fluid whole milk. However, if other groups of food are used in the quantities given in the food plans, nonfat dry milk can make up one-third of the milk equivalent quarts without risk of inadequacy of vitamin A. If more than this quantity of dry milk is used or if the quantities of other foods are changed, the quantities of butter or fortified margarine and leafy, green, and yellow vegetables, especially the dark green leafy and yellow kinds, should be appraised to see that enough have been included.

3/ Quantities given assume purchases of some baked products which include milk, eggs, fat, and sugar. Therefore, in institutions that have their own bake shops, quantities for these groups will need to be increased.

4/ Count 1-2/3 pounds of bread as 1 pound of flour. Use as much as possible in the form of whole-grain, enriched, or restored products (see p. 21).

5/ To meet iron allowance include weekly one large or two small servings of liver or other organ meats.

Table 8.--Number of servings of specified size (ready-to-serve basis 1/) provided by quantities of vegetables, fruits, meat, poultry, and fish given in low-cost plan, per person per week

Age and activity group	Leafy, green, and yellow vegetables		Citrus fruit, tomatoes		Potatoes, sweetpotatoes		Other vegetables and fruits		Meat, poultry, fish	
	Servings	Serving size	Servings	Serving size	Servings	Serving size	Servings	Serving size	Servings	Serving size
	Number	Ounces	Number	Ounces	Number	Ounces	Number	Ounces	Number	Ounces
Children through 12 years:										
1-3 years	11	2	7	3	7	2	7	2½	7	1
4-6 years	7	3	7	3	7	3	7	3	7	2
7-12 years	8-9	3	7	4	8-9	4	7-8	4	7	3
Girls:										
13-20 years	9	3	7	4	2/ 9-10	4	8	4	8	3
Boys:										
13-20 years	10-11	3	8	4	8-10	6	8-9	5	8	3
Women:										
Sedentary and moderately active	9	3	7	4	7-9	4	8	4	8	3
Very active	10	3	8	4	12	4	8	4	8	3
Pregnant and nursing	12-14	3	8-12	4	8-12	4	8-10	4	10	3
Men:										
Sedentary and physically active	9-10	3	7-8	4	9-12	4	8	4	8	3
With heavy work	10	3	8	4	10	8	9	5	8	3
Women and men, 60 years or over	10	3	7	4	8-10	4	8	4	8	3

1/ Takes into account refuse (weighted within each group according to average use of individual foods) discarded in preparation of food: Leafy, green, and yellow vegetables, 23 percent refuse; citrus fruit and tomatoes, 20 percent; potatoes, sweetpotatoes, 16 percent; other vegetables and fruits, 23 percent; and meat, poultry, fish, 19 percent. Also considered for meat, poultry, and fish is a 31 percent (weighted average) allowance for shrinkage during cooking.

2/ The larger number of servings is for the younger girl.

Table 9.--FOOD PLAN AT MODERATE COST: Quantities of food (as purchased) for 1 person for 7 days, for 18 age and activity groups

Family members	Leafy, green, and yellow vegetables 1/	Citrus fruit, tomatoes	Potatoes, sweet-potatoes	Other vegetables and fruits 1/	Milk equivalent 2/ 3/	Meat, poultry, fish	Eggs 3/	Dry beans and peas, nuts	Flour equivalent 4/	Fats, oils 3/	Sugar, sirups, preserves 3/
	Lb. Oz.	Lb. Oz.	Lb. Oz.	Lb. Oz.	Qt.	Lb. Oz.	No.	Lb. Oz.	Lb. Oz.	Lb. Oz.	Lb. Oz.
Children through 12 years:											
1-3 years	2 - 0	2 - 0	0 - 8	1 - 12	6	5/ 1 - 0	7	0 - 1	1 - 4	0 - 2	0 - 2
4-6 years	2 - 4	2 - 4	1 - 0	2 - 8	6	1 - 12	8	0 - 1	1 - 8	0 - 6	0 - 8
7-9 years	2 - 8	2 - 8	2 - 0	2 - 12	6½	2 - 8	8	0 - 2	2 - 0	0 - 8	0 - 14
10-12 years	3 - 0	2 - 12	2 - 4	3 - 0	7	3 - 4	8	0 - 2	2 - 12	0 - 14	1 - 0
Girls:											
13-15 years	3 - 4	2 - 12	2 - 8	3 - 8	7	5/ 3 - 8	8	0 - 2	2 - 12	1 - 0	1 - 0
16-20 years	3 - 4	2 - 12	2 - 8	3 - 8	6	5/ 3 - 8	8	0 - 2	2 - 8	0 - 14	1 - 0
Boys:											
13-15 years	3 - 8	3 - 0	3 - 4	3 - 12	7	3 - 12	8	0 - 4	4 - 0	1 - 4	1 - 4
16-20 years	4 - 0	3 - 8	4 - 4	3 - 12	7	4 - 4	8	0 - 6	5 - 4	1 - 8	1 - 6
Women:											
Sedentary	3 - 4	2 - 8	2 - 0	3 - 8	5	3 - 8	8	0 - 1	1 - 12	0 - 12	0 - 14
Moderately active	3 - 4	2 - 8	2 - 8	3 - 8	5	4 - 0	8	0 - 2	2 - 8	1 - 0	1 - 0
Very active	3 - 12	3 - 0	3 - 0	4 - 0	5	4 - 0	8	0 - 4	3 - 12	1 - 4	1 - 4
Pregnant	4 - 0	3 - 8	2 - 4	3 - 4	7½	5/ 4 - 0	8	0 - 2	2 - 4	0 - 12	0 - 12
Nursing	4 - 0	4 - 8	2 - 12	3 - 12	10½	5/ 4 - 0	8	0 - 2	2 - 8	0 - 12	0 - 14
60 years or over	3 - 8	2 - 12	2 - 0	3 - 4	5½	3 - 8	6	0 - 1	1 - 12	0 - 12	0 - 12
Men:											
Sedentary	3 - 4	2 - 8	2 - 8	3 - 8	5	4 - 0	8	0 - 2	2 - 8	1 - 0	1 - 0
Physically active	3 - 12	3 - 0	3 - 0	4 - 0	5	4 - 0	8	0 - 4	3 - 12	1 - 4	1 - 4
With heavy work	4 - 0	3 - 8	4 - 12	4 - 8	5	4 - 4	8	0 - 6	7 - 0	2 - 4	1 - 6
60 years or over	3 - 8	2 - 12	2 - 8	3 - 4	5½	3 - 8	6	0 - 1	2 - 8	0 - 14	0 - 14

See footnotes following table 7.

Table 10.--Approximate number of servings of specified size (ready-to-serve basis 1/) provided by quantities of vegetables, fruits, meat, poultry, and fish given in moderate-cost plan, per person per week

Age and activity group	Leafy, green, and yellow vegetables		Citrus fruit, tomatoes		Potatoes, sweetpotatoes		Other vegetables and fruits		Meat, poultry, fish	
	Servings	Serving size	Servings	Serving size	Servings	Serving size	Servings	Serving size	Servings	Serving size
	Number	Ounces	Number	Ounces	Number	Ounces	Number	Ounces	Number	Ounces
Children through 12 years:										
1-3 years	12	2	9	3	7	1	9	2½	9	1
4-6 years	9	3	10	3	7	2	10	3	8	2
7-12 years	10-12	3	8-9	4	7-8	4	8-9	4	7-9	3
Girls:										
13-20 years	13	3	9	4	8	4	11	4	10	3
Boys:										
13-20 years	14-16	3	10-11	4	7-9	6	9	5	11-12	3
Women:										
Sedentary and moderately active	13	3	8	4	7-8	4	11	4	10-12	3
Very active	15	3	10	4	10	4	10	5	12	3
Pregnant and nursing	16	3	11-14	4	8-9	4	10-11	4	12	3
Men:										
Sedentary and physically active	13-15	3	8-10	4	8-10	4	11-12	4	12	3
With heavy work	16	3	11	4	8	8	11	5	12	3
Women and men, 60 years or over	14	3	9	4	7-8	4	10	4	10	3

1/ Takes into account amounts of refuse (weighted within each group according to average use of individual foods) discarded in preparation of food: Leafy, green, and yellow vegetables, 23 percent refuse; citrus fruit and tomatoes, 20 percent; potatoes, sweetpotatoes, 16 percent; other vegetables and fruits, 23 percent; and meat, poultry, fish, 19 percent. Also considered for meat, poultry, and fish is a 31 percent (weighted average) allowance for shrinkage during cooking.

Table 11.--FOOD PLAN AT LOW COST: Quantities of food (as purchased) for 1 person for 1 day, for 18 age and activity groups 1/

Family members	Leafy, green, and yellow vegetables 2/	Citrus fruit, tomatoes	Potatoes, sweet-potatoes	Other vegetables and fruits 2/	Milk equivalent 3/ 4/	Meat, poultry, fish	Eggs 4/	Dry beans and peas, nuts	Flour equivalent 5/	Fats, oils 4/	Sugar, sirups, preserves 4/
	Lb.	Lb.	Lb.	Lb.	Qt.	Lb.	No.	Lb.	Lb.	Lb.	Lb.
Children through 12 years:											
1-3 years	0.25	0.25	0.12	0.19	0.8	6/ 0.12	0.9	0.01	0.19	0.02	0.02
4-6 years	.25	.25	.19	.25	.8	.19	.9	.02	.25	.05	.05
7-9 years	.31	.31	.38	.31	.8	.31	.9	.04	.31	.07	.11
10-12 years	.31	.31	.38	.38	.9	.38	.9	.04	.44	.13	.13
Girls:											
13-15 years	.31	.31	.44	.38	.9	6/ .38	.9	.04	.50	.13	.13
16-20 years	.31	.31	.38	.38	.7	6/ .38	.9	.04	.44	.13	.11
Boys:											
13-15 years	.38	.38	.56	.44	.9	.38	.9	.07	.62	.16	.14
16-20 years	.38	.38	.69	.50	.9	.38	.9	.07	.81	.21	.16
Women:											
Sedentary	.31	.31	.31	.38	.7	.38	.9	.04	.31	.10	.11
Moderately active	.31	.31	.38	.38	.7	.38	.9	.04	.44	.13	.13
Very active	.38	.38	.56	.38	.7	.38	.9	.05	.62	.16	.16
Pregnant	.44	.38	.38	.38	1.1	6/ .44	1.1	.04	.38	.11	.07
Nursing	.50	.56	.56	.44	1.5	6/ .50	1.1	.04	.44	.11	.07
60 years or over	.38	.31	.38	.38	.7	.38	.6	.02	.31	.07	.07
Men:											
Sedentary	.31	.31	.38	.38	.7	.38	.9	.04	.44	.13	.13
Physically active	.38	.38	.56	.38	.7	.38	.9	.05	.62	.16	.16
With heavy work	.38	.38	.81	.50	.7	.38	.9	.09	1.12	.30	.16
60 years or over	.38	.31	.44	.38	.7	.38	.6	.02	.44	.11	.11

1/ Quantities for all vegetables and fruits, meat, poultry, fish, and flour equivalent groups have been rounded to the nearest ounce.

2/ Quantities allow for some fresh and some canned or frozen vegetables and fruits. If large proportion of fresh vegetables and fruits that have a high percentage of refuse--corn on the cob, peas and lima beans in the pod, melons--are used when in season, the total quantities in these groups may need to be increased by as much as 50 to 75 percent during that short period.

3/ Fluid milk or its equivalent in cheese, evaporated milk, or nonfat dry milk (see p. 20). Nonfat dry milk lacks the fat and vitamin A value of fluid whole milk. However, if other groups of food are used in the quantities given in the food plans, nonfat dry milk can make up one-third of the milk equivalent quarts without risk of inadequacy of vitamin A. If more than this quantity of dry milk is used or if the quantities of other foods are changed, the quantities of butter or fortified margarine and leafy, green, and yellow vegetables, especially the dark green leafy and yellow kinds, should be appraised to see that enough have been included.

4/ Quantities given assume purchases of some baked products which include milk, eggs, fat, and sugar. Therefore, in institutions that have their own bake shops, quantities for these groups will need to be increased.

5/ Count 1-2/3 pounds of bread as 1 pound of flour. Use as much as possible in the form of whole-grains, enriched, or restored products (see p. 21).

6/ To meet iron allowance include weekly one large or two small servings of liver or other organ meats.

Table 12.--FOOD PLAN AT MODERATE COST: Quantities of food (as purchased) for 1 person for 1 day, for 18 age and activity groups 1/

Family members	Leafy, green, and yellow vegetables 2/	Citrus fruit, tomatoes	Potatoes, sweet-potatoes	Other vegetables and fruits 2/	Milk equivalent 3/ 4/	Meat, poultry, fish	Eggs 4/	Dry beans and peas, nuts	Flour equivalent 5/	Fats, oils 4/	Sugar, sirups, preserves 4/
	Lb.	Lb.	Lb.	Lb.	Qt.	Lb.	No.	Lb.	Lb.	Lb.	Lb.
Children through 12 years:											
1-3 years	0.31	0.31	0.06	0.25	0.9	6/ 0.12	1.0	0.01	0.19	0.02	0.02
4-6 years	.31	.31	.12	.38	.9	.25	1.1	.01	.19	.06	.08
7-9 years	.38	.38	.25	.38	.9	.38	1.1	.02	.31	.08	.12
10-12 years	.44	.38	.31	.44	1.0	.44	1.1	.02	.38	.12	.14
Girls:											
13-15 years	.44	.38	.38	.50	1.0	6/ .50	1.1	.02	.38	.14	.14
16-20 years	.44	.38	.38	.50	.9	6/ .50	1.1	.02	.38	.12	.14
Boys:											
13-15 years	.50	.44	.44	.56	1.0	.56	1.1	.04	.56	.18	.18
16-20 years	.56	.50	.62	.56	1.0	.62	1.1	.05	.75	.22	.20
Women:											
Sedentary	.44	.38	.31	.50	.7	.50	1.1	.01	.25	.10	.12
Moderately active	.44	.38	.38	.50	.7	.56	1.1	.02	.38	.14	.14
Very active	.56	.44	.44	.56	.7	.56	1.1	.04	.56	.18	.18
Pregnant	.56	.50	.31	.44	1.1	6/ .56	1.1	.02	.31	.10	.10
Nursing	.56	.62	.38	.56	1.5	6/ .56	1.1	.02	.38	.10	.12
60 years or over	.50	.38	.25	.44	.8	.50	.9	.01	.25	.10	.10
Men:											
Sedentary	.44	.38	.38	.50	.7	.56	1.1	.02	.38	.14	.14
Physically active	.56	.44	.44	.56	.7	.56	1.1	.04	.56	.18	.18
With heavy work	.56	.50	.69	.62	.7	.62	1.1	.05	1.00	.32	.20
60 years or over	.50	.38	.38	.44	.8	.50	.9	.01	.38	.12	.12

See footnotes following table 11.

APPENDIX E

Food Purchasing Guide

The following tables 3/ give information helpful in planning quantities of food to buy and in using the food plans (tables 1, 2, 7, 9, 11, and 12).

Tables of Purchase Units

Listing of foods.--Foods have been listed by major groups. Within each of these groups, the individual foods are arranged alphabetically. All forms of the same food are classified together; for instance, information on fresh, frozen, and canned snap beans is given under "Beans, snap."

Units of purchase.--Purchase units are given in a range of sizes to fit both large and small institutions.

"Do" has been used instead of ditto sign to indicate repetition of the unit given for the food listed above it.

Approximate weight of unit (as purchased).--Weight given for purchase units refer to weights as purchased on the market. Legal weights for such units as bushels, lugs, crates, and boxes vary in different States. The weights given in this publication are those that appear to be the most representative. Unless otherwise specified, weights shown for canned foods are the same as those given on cans.

Approximate percent refuse.--Refuse figures apply to the percentage of total purchased weight usually discarded in preparation of food. Included as refuse are bones, pits, shells, and other inedible material, and also, for some foods, portions that could be eaten but as a rule are discarded--potato parings and outer leaves of vegetables, for example. In general the percentages for refuse have been based on products in good condition. They will not apply if there is excessive refuse from bruising, insect infestation, or rot, or if peeling and trimming are done extravagantly.

Unless otherwise indicated, figures given for percent refuse are based on estimates in Agriculture Handbook No. 8, Composition of Foods--Raw, Processed, Prepared, table 2.

Size of serving.--A definite weight is given for the serving size of all foods except those for which quantities are determined by use, such as shortenings and sugar. Institutions that use a different serving size will need to adjust the number of purchase units accordingly. A method for doing this is given on page 88.

"Do" has been used to indicate repetition of information given for preceding items.

3/ The authors wish to express their appreciation to Jessie P. Brooks for valuable assistance in calculating and checking data for these tables.

Approximate number of servings per purchase unit.--In figuring servings per purchase unit, allowance has been made for average quantities of refuse. However, the number of servings may vary, especially for vegetables and fruits, depending on the condition of the food when purchased and waste in preparation. This should be kept in mind in using the figures.

For small unit sizes, the number of servings has been rounded to the nearest whole number.

Approximate number of purchase units needed to serve 100.--These quantities are based on the unrounded estimates of the number of servings per purchase unit. Some of these figures, therefore, will not be exact multiples of the number of servings given for small unit sizes.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds	Ounces	Number	Number
Asparagus:							
Fresh.....	Pound.....	1.00	5/ 30	0.70	3	4	27
	Bunch.....	2.00	5/ 30	1.40	3	7	14
	Crate.....	30.00	5/ 30	21.00	3	110	1
Canned.....	No. 2 can.....	1.19	0	...	3	6/ 4	24
	No. 10 can.....	6.44	0	...	3	6/ 21	5
Frozen.....	Package.....	.75	0	.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8
	Container.....	6.00	0	6.00	3	32	3
	Can.....	15.00	0	15.00	3	79	1-1/4
Beans, kidney:							
Canned.....	No. 2 can.....	1.25	0	...	6	3	30
	No. 2 cylinder.	1.62	0	...	6	4	24
	No. 3 cylinder.	3.25	0	...	6	8	12
	No. 10 can.....	6.75	0	...	6	18	6
Dried.....	Package.....	1.00	0	1.00	6	9	11
	Bag.....	100.00	0	100.00	6	...	...
Beans, lima:							
Fresh, unshelled....	Pound.....	1.00	60	.40	3	2	50
	Bushel.....	32.00	60	12.80	3	67	1-1/2
Canned.....	No. 303 can....	1.00	0	...	3	6/ 3-1/2	28
	No. 2 can.....	1.25	0	...	3	6/ 4-1/2	22
	No. 10 can.....	6.56	0	...	3	6/ 24	4
Frozen.....	Package.....	.75	0	.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8
	Container.....	6.00	0	6.00	3	32	3
	Can.....	15.00	0	15.00	3	79	1-1/4
	.....do.....	25.00	0	25.00	3	132	3/4
Dried.....	Package.....	1.00	0	1.00	6	9	11
	Bag.....	100.00	0	100.00	6	...	...
Beans, navy:							
Canned.....	No. 303 can....	.97	0	...	6	2-1/2	39
	No. 2 cylinder.	1.62	0	...	6	4	24
	No. 10 can.....	6.88	0	...	6	18	6

See footnotes on page 59.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds	Ounces	Number	Number
Beans, navy--Con.							
Dried.....	Package.....	1.00	0	1.00	6	9	11
	Bag.....	100.00	0	100.00	6	...	...
Beans, snap, green, or wax:							
Fresh.....	Pound.....	1.00	10	.90	3	5	21
	Bushel.....	30.00	10	27.00	3	142	3/4
Canned.....	No. 303 can....	.97	0	...	3	6/ 3	31
	No. 2 can.....	1.19	0	...	3	6/ 4	25
	No. 10 can.....	6.31	0	...	3	6/ 21	5
Frozen.....	Package.....	.62	0	.62	3	3	31
	.....do.....	.75	0	.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8
	Container.....	6.00	0	6.00	3	32	3
	Can.....	15.00	0	15.00	3	79	1-1/4
	.....do.....	25.00	0	25.00	3	132	3/4
Beets, with tops:							
Fresh.....	Bunch.....	1.19	47	.63	3	3	30
	Crate.....	70.00	47	37.10	3	195	1/2
Beets, without tops:							
Fresh.....	Pound.....	1.00	25	.75	3	4	25
	Bushel.....	52.00	25	39.00	3	205	1/2
Canned.....	No. 2 can.....	1.25	0	...	3	6/ 4	23
	No. 2-1/2 can..	1.75	0	...	3	6/ 6	17
	No. 10 can.....	6.50	0	...	3	6/ 23	4-1/2
Broccoli:							
Fresh.....	Pound.....	1.00	39	.61	3	3	31
	Bunch.....	2.00	39	1.22	3	6	16
	Crate.....	63.00	39	38.43	3	202	1/2
Frozen.....	Package.....	.62	0	.62	3	3	31
	.....do.....	.75	0	.75	3	4	25
	.....do.....	2.00	0	2.00	3	10-1/2	10
	.....do.....	2.50	0	2.50	3	13	8
	Container.....	6.00	0	6.00	3	32	3
	.....do.....	15.00	0	15.00	3	79	1-1/4
Brussels sprouts:							
Fresh.....	Pound.....	1.00	5/ 33	.67	3	3-1/2	28
	Drum.....	35.00	5/ 33	23.45	3	124	3/4

See footnotes on page 59.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds	Ounces	Number	Number
Brussels sprouts--Con.							
Frozen.....	Package.....	0.62	0	0.62	3	3	31
	.....do.....	.75	0	.75	3	4	25
	.....do.....	2.00	0	2.00	3	10-1/2	10
	.....do.....	2.50	0	2.50	3	13	8
	Container.....	6.00	0	6.00	3	32	3
	.....do.....	15.00	0	15.00	3	79	1-1/4
Cabbage:							
Fresh.....	Pound.....	1.00	5/ 25	.75	3	4	25
	Bushel.....	32.00	5/ 25	24.00	3	126	3/4
	1-1/2-bushel hamper.	48.00	5/ 25	36.00	3	189	1/2
	Sack.....	50.00	5/ 25	37.50	3	197	1/2
Carrots, with tops:							
Fresh.....	Bunch.....	.75	37	.47	3	2-1/2	40
Carrots, without tops:							
Fresh.....	Pound.....	1.00	12	.88	3	5	22
	Sack or bushel.	50.00	12	44.00	3	231	1/2
Canned.....	No. 303 can....	1.00	0	...	3	6/ 4	27
	No. 2 can.....	1.25	0	...	3	6/ 4-1/2	22
	No. 10 can.....	6.56	0	...	3	6/ 23	4-1/2
Cauliflower:							
Fresh.....	Pound.....	1.00	55	.45	3	2-1/2	42
	Head.....	2.00	55	.90	3	5	21
	1-1/2-bushel crate.	37.00	55	16.65	3	88	1-1/4
Frozen.....	Package.....	.62	0	.62	3	3	31
	.....do.....	.75	0	.75	3	4	25
	.....do.....	.81	0	.81	3	4	24
	.....do.....	2.00	0	2.00	3	10-1/2	10
	Container.....	6.00	0	6.00	3	32	3
	.....do.....	15.00	0	15.00	3	79	1-1/4
Celery:							
Fresh.....	Medium stalk...	1.00	37	.63	3	3	30
	1/2-crate.....	65.00	37	40.95	3	215	1/2
Corn:							
Fresh.....	Dozen ears.....	8.40	62	3.19	3 cut	17	6
	Bushel.....	35.00	62	13.30	3 cut	70	1-1/2
	Sack (100 ears)	55.00	62	20.90	3 cut	110	1

See footnotes on page 59.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
Corn--Con.		Pounds	Percent	Pounds	Ounces	Number	Number
Canned:							
Cream style.....	No. 303 can....	1.00	0	...	4	4	25
	No. 2 can.....	1.25	0	...	4	5	20
	No. 10 can.....	6.62	0	...	4	26	4
Vacuum pack.....	No. 2 can.....	.75	0	...	4	3	33
Whole grain.....	No. 303 can....	1.00	0	...	4	6/ 3	37
	No. 2 can.....	1.25	0	...	4	6/ 3-1/2	30
	No. 10 can.....	6.62	0	...	4	6/ 18	5-1/2
Frozen, cut.....	Package.....	.62	0	0.62	3	3	31
	.....do.....	.75	0	.75	3	4	25
	.....do.....	.81	0	.81	3	4	24
	.....do.....	2.50	0	2.50	3	13	8
	Container.....	6.00	0	6.00	3	32	3
	Can.....	15.00	0	15.00	3	79	1-1/4
	.....do.....	25.00	0	25.00	3	132	3/4
Cucumbers:							
Fresh.....	Pound.....	1.00	5/ 27	.73	3 (raw)	4	26
	Bushel.....	48.00	5/ 27	35.04	3 (raw)	184	1/2
Eggplant:							
Fresh.....	Pound.....	1.00	5/ 12	.88	3	5	22
	Bushel.....	33.00	5/ 12	29.04	3	153	2/3
	Crate.....	48.00	5/ 12	42.24	3	222	1/2
Kale:							
Fresh.....	Pound.....	1.00	36	.64	3	3	30
	Bushel.....	18.00	36	11.52	3	61	1-2/3
Frozen.....	Package.....	.75	0	.75	3	4	25
	.....do.....	2.00	0	2.00	3	10-1/2	10
Lettuce:							
Fresh.....	Head.....	1.00	31	.69	2 (raw)	5	18
	Western crate..	70.00	31	48.30	2 (raw)	386	1/4
Okra:							
Fresh.....	Pound.....	1.00	5/ 18	.82	3	4	23
	Till.....	4.00	5/ 18	3.28	3	17	6
	Lug.....	20.00	5/ 18	16.40	3	86	1-1/4

See footnotes on page 59.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds	Ounces	Number	Number
Okra--Con.							
Canned.....	No. 2 can.....	1.19	0	...		Determined by use	
	No. 2-1/2 can..	1.69	0	...		do	
	No. 10 can.....	6.19	0	...		do	
Onions:							
Mature.....	Pound.....	1.00	6	0.94	4	4	27
	Sack.....	50.00	6	47.00	4	188	1/2
	.....do.....	100.00	6	94.00	4	376	1/4
Canned.....	No. 2 can.....	1.19	0	...	4	6/ 3	34
	No. 10 can.....	6.31	0	...	4	6/ 15	7
Parsnips:							
Fresh.....	Pound.....	1.00	22	.78	3	4	25
	Bushel.....	50.00	22	39.00	3	205	1/2
Canned.....	No. 2 can.....	1.25	0	...	3	6/ 5	22
	No. 2-1/2 can..	1.75	0	...	3	6/ 6	16
	No. 10 can.....	6.50	0	...	3	6/ 24	4
Peas, green:							
Fresh, unshelled....	Pound.....	1.00	5/ 60	.40	3	2	48
	Bushel.....	30.00	5/ 60	12.00	3	63	1-2/3
Canned.....	No. 303 can....	1.00	0	...	3	6/ 4	23
	No. 2 can.....	1.25	0	...	3	6/ 5	18-1/2
	No. 10 can.....	6.56	0	...	3	6/ 28	3-1/2
Frozen.....	Package.....	.75	0	.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8
	Container.....	5.00	0	5.00	3	26	4
	.....do.....	15.00	0	15.00	3	79	1-1/4
	Can.....	25.00	0	25.00	3	132	3/4
Peas, black-eye, dried	Package.....	1.00	0	1.00	7	7	14
	.....do.....	100.00	0	100.00	7	...	...
Peas, split, dried....	.....do.....	1.00	0	1.00	7	7	14
	.....do.....	100.00	0	100.00	7	...	...
Peas and carrots:							
Canned.....	No. 303 can....	1.00	0	...	3	6/ 4	23
	No. 2 can.....	1.25	0	...	3	6/ 5	18-1/2
	No. 10 can.....	6.56	0	...	3	6/ 28	3-1/2

See footnotes on page 59.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
Peas and carrots--Con.		Pounds	Percent	Pounds	Ounces	Number	Number
Frozen.....	Package.....	0.75	0	0.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8
Potatoes:							
Fresh.....	Pound.....	1.00	16	.84	4 mashed	3	30
	Peck.....	15.00	16	12.60	4 mashed	50	2
	Bushel.....	60.00	16	50.40	4 mashed	202	1/2
	Sack.....	100.00	16	84.00	4 mashed	336	1/3
Rutabagas:							
Fresh.....	Pound.....	1.00	15	.85	3	4-1/2	22
	Peck.....	14.00	15	11.90	3	63	1-2/3
	Bushel.....	56.00	15	47.60	3	251	1/2
Sauerkraut:							
Canned.....	No. 2 can.....	1.19	0	...	3	6/ 5	20
	No. 2-1/2 can..	1.69	0	...	3	6/ 8	13
	No. 10 can.....	6.19	0	...	3	6/ 26	4
Soups, concentrated:							
Canned:							
Bouillon.....	No. 2 cylinder.	1.56	0	...	8 7/ 8/	6	17
	No. 3 cylinder.	3.06	0	...	8 7/ 8/	12	9
	No. 10 can.....	6.50	0	...	8 7/ 8/	24	4
Tomato.....	No. 2 cylinder.	1.56	0	...	8 7/ 8/	6	17
	No. 3 cylinder.	3.12	0	...	8 7/ 8/	12	9
	No. 10 can.....	6.56	0	...	8 7/ 8/	24	4
Vegetable.....	No. 2 cylinder.	1.62	0	...	8 7/ 8/	6	17
	No. 3 cylinder.	3.19	0	...	8 7/ 8/	12	9
	No. 10 can.....	6.69	0	...	8 7/ 8/	24	4
Spinach:							
Fresh.....	Pound.....	1.00	5/ 25	.75	3	4	25
	Bushel.....	18.00	5/ 25	13.50	3	71	1-1/2
Canned.....	No. 2 can.....	1.12	0	...	3	6/ 4	24
	No. 2-1/2 can..	1.69	0	...	3	6/ 6	16
	No. 10 can.....	6.12	0	...	3	6/ 20	5

See footnotes on page 59.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
Spinach--Con.		Pounds	Percent	Pounds	Ounces	Number	Number
Frozen.....	Package.....	0.75	0	0.75	3	4	25
	.....do.....	.88	0	.88	3	5	22
	.....do.....	1.00	0	1.00	3	5	19
	.....do.....	2.50	0	2.50	3	13	8
	.....do.....	3.00	0	3.00	3	16	6
	.....do.....	6.00	0	6.00	3	32	3
	Container.....	12.00	0	12.00	3	63	1-2/3
	Can.....	22.00	0	22.00	3	116	1
Squash:							
Summer.....	Pound.....	1.00	5/ 5	.95	4	4	26
	Bushel.....	40.00	5/ 5	38.00	4	152	2/3
Winter:							
Fresh.....	Pound.....	1.00	5/ 40	.60	4	2-1/2	42
	Lug.....	50.00	5/ 40	30.00	4	120	3/4
Canned.....	No. 2 can.....	1.25	0	...	4	5	20
	No. 2-1/2 can..	1.81	0	...	4	7	14
	No. 10 can.....	6.62	0	...	4	26	4
Frozen.....	Package.....	1.00	0	1.00	4	4	25
Succotash:							
Canned.....	No. 303 can....	1.00	0	...	3	6/ 3-1/2	28
	No. 2 can.....	1.25	0	...	3	6/ 4-1/2	22
	No. 10 can.....	6.75	0	...	3	6/ 24	4
Frozen.....	Package.....	.75	0	.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8
Sweetpotatoes:							
Fresh.....	Pound.....	1.00	14	.86	4	3-1/2	29
	Peck.....	13.75	14	11.82	4	47	2
	Bushel.....	55.00	14	47.30	4	189	1/2
Canned:							
Dry pack.....	No. 2 can.....	1.19	0	...	4	5	21
	No. 2-1/2 can..	1.81	0	...	4	7	14
	No. 10 can.....	6.38	0	...	4	25	4
Sirup pack.....	No. 2 can.....	1.25	0	...	4	6/ 3-1/2	29
	No. 2-1/2 can..	1.81	0	...	4	6/ 5	21
	No. 10 can.....	6.38	0	...	4	6/ 19	5
Vacuum pack.....	No. 3 vacuum...	1.12	0	...	4	4-1/2	22

See footnotes on page 59.

Table 13.--VEGETABLES--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Vegetables	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds	Ounces	Number	Number
Tomatoes:							
Fresh.....	Pound.....	1.00	9/ 2	0.98	4 (raw)	4	26
	Lug box.....	32.00	9/ 2	31.36	4 (raw)	125	3/4
	Bushel.....	53.00	9/ 2	51.94	4 (raw)	208	1/2
Canned.....	No. 2 can.....	1.19	0	...	4	5	21
	No. 2-1/2 can..	1.75	0	...	4	7	14
	No. 10 can.....	6.38	0	...	4	25	4
Tomato juice, canned..	No. 2 cylinder.	1.47	0	...	4 7/	6	17
	No. 3 cylinder.	2.93	0	...	4 7/	12	9
	No. 10 can.....	6.12	0	...	4 7/	24	4
Tomato paste, canned..	No. 2-1/2 can..	1.88	0	...	Determined by use		
	No. 10 can.....	6.94	0	...		do	
Tomato puree, canned..	No. 2 can.....	1.19	0	...		do	
	No. 10 can.....	6.50	0	...		do	
Turnips, without tops:							
Fresh.....	Pound.....	1.00	5/ 20	.80	3	4	24
	Bushel.....	54.00	5/ 20	43.20	3	227	1/2
Turnip greens:							
Fresh.....	Pound.....	1.00	5/ 25	.75	3	4	25
	Crate.....	40.00	5/ 25	30.00	3	158	2/3
Canned.....	No. 2 can.....	1.12	0	...	3	6/ 4	24
	No. 2-1/2 can..	1.69	0	...	3	6/ 6	16
	No. 10 can.....	6.12	0	...	3	6/ 20	5
Frozen.....	Package.....	.75	0	.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8
Vegetable juice:							
Canned.....	No. 2 cylinder.	1.47	0	...	4 7/	6	17
	No. 3 cylinder.	2.93	0	...	4 7/	12	9
	No. 10 can.....	6.12	0	...	4 7/	24	4
Vegetables mixed:							
Canned.....	No. 303 can....	1.00	0	...	3	6/ 4	27
	No. 2 can.....	1.25	0	...	3	6/ 4-1/2	22
	No. 10 can.....	6.50	0	...	3	6/ 24	4
Frozen.....	Package.....	.75	0	.75	3	4	25
	.....do.....	2.50	0	2.50	3	13	8

See footnotes on page 59.

Footnotes for table 13.--Vegetables--fresh, canned, frozen, dried.

1/ A. P., as purchased.
2/ Based upon Composition of Foods--Raw, Processed, Prepared, U. S. Dept. Agr. Handbook No. 8.
3/ E. P., edible portion.
4/ Cooked unless otherwise indicated. The size of serving of all vegetables measures approximately 1/2 cup except dry beans and peas which measure approximately 3/4 cup.
5/ Unpublished data compiled by Bureau of Human Nutrition and Home Economics.
6/ Drained weight.
7/ Fluid ounces.
8/ Diluted.
9/ Based upon Proximate Composition of American Food Materials, U. S. Dept. Agr. Circular No. 549.

Table 14.--VEGETABLES: Approximate amount of canned product obtained from specified quantities of fresh vegetables

Vegetables	Fresh	Canned yield
Asparagus.....	4 pounds 1 bushel	1 quart 11 quarts
Beans, lima in pods.....	4 to 5 pounds 1 bushel	1 quart 6 to 8 quarts
Beans, snap.....	1-1/2 to 2 pounds 1 bushel	1 quart 15 to 20 quarts
Beets, without tops.....	2-1/2 to 3 pounds 1 bushel	1 quart 17 to 20 quarts
Carrots, without tops.....	2-1/2 to 3 pounds 1 bushel	1 quart 16 to 20 quarts
Corn, sweet, in husks.....	6 to 16 ears 1 bushel	1 quart 8 to 9 quarts
Peas, green, in pods.....	2 to 2-1/2 pounds 1 bushel	1 pint 12 to 15 quarts
Spinach.....	2 to 3 pounds 1 bushel	1 quart 6 to 9 quarts
Squash, summer.....	2 to 2-1/2 pounds 1 bushel	1 quart 16 to 20 quarts
Sweetpotatoes.....	2-1/2 to 3 pounds 1 bushel	1 quart 18 to 22 quarts
Tomatoes.....	2-1/2 to 3 pounds 1 bushel	1 quart 15 to 20 quarts

Table 15.--FRUITS--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100

Fruit	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds		Number	Number
Apple butter:							
Canned.....	No. 2 can.....	1.38	0	...	1 ounce	22	5
	No. 2-1/2 can.	2.06	0	...	1 ounce	33	3
	No. 10 can....	7.50	0	...	1 ounce	120	3/4
Apples:							
Fresh.....	Pound.....	1.00	12	0.88	3 ounces diced	5	22
	.....do.....	1.00	5/	...	1 medium	3	34
	Bushel.....	48.00	5/	...	1 medium	144	3/4
Canned.....	No. 2 can.....	1.12	0	...		Determined by use	
	No. 2-1/2 can.	1.62	0	...		do	
	No. 10 can....	5.94	0	...		do	
Frozen.....	Container.....	1.00	0	1.00		do	
	.....do.....	2.50	0	2.50		do	
	.....do.....	5.00	0	5.00		do	
	.....do.....	15.00	0	15.00		do	
	Can.....	30.00	0	30.00		do	
Dried.....	Package.....	1.00	0	1.00	5 ounces cooked	16	6
	.....do.....	2.00	0	2.00	5 ounces cooked	32	3
	.....do.....	25.00	0	25.00	5 ounces cooked	400	1/4
	.....do.....	50.00	0	50.00	5 ounces cooked	800	1/8
Applesauce:							
Canned.....	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 2-1/2 can.	1.81	0	...	4 ounces	7	14
	No. 10 can....	6.75	0	...	4 ounces	27	4
Apricots:							
Fresh.....	Pound.....	1.00	5/	...	2 medium	6	17
	Western crate.	22.00	5/	...	2 medium	132	3/4
	Bushel.....	48.00	5/	...	2 medium	288	1/3
Canned 6/.....	No. 2 can.....	1.25	0	...	4 medium halves	5	20
	No. 2-1/2 can.	1.88	0	...	4 medium halves	7	14
	No. 10 can....	6.75	0	...	4 medium halves	25	4

See footnotes on page 67.

Table 15.--FRUITS--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Fruit	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds		Number	Number
Apricots--Con.							
Frozen.....	Container.....	1.00	0	1.00		Determined by use	
	.....do.....	2.50	0	2.50		do	
	.....do.....	5.00	0	5.00		do	
	.....do.....	15.00	0	15.00		do	
	Can.....	30.00	0	30.00		do	
Dried.....	Package.....	1.00	0	1.00	5 ounces cooked	8	13
	.....do.....	2.00	0	2.00	5 ounces cooked	16	6
	Box.....	25.00	0	25.00	5 ounces cooked	200	1/2
	.....do.....	50.00	0	50.00	5 ounces cooked	400	1/4
Bananas:							
Fresh.....	Pound.....	1.00	5/	...	1 medium	3	34
	.....do.....	1.00	33	.67	3 ounces	4	28
	Dozen.....	4.00	33	2.68	3 ounces	14	7
	Hand.....	5.00	33	3.35	3 ounces	18	6
	Bunch.....	45.00 to 65.00	33	30.15 to 43.55	3 ounces	139 to 229	1/2 to 2/3
Berries:							
Blackberries:							
Fresh.....	Quart.....	1.50	0	1.50	3 ounces	8	13
	24-quart crate	36.00	0	36.00	3 ounces	189	1/2
Canned 6/.....	No. 303 can...	1.00	0	...	4 ounces	4	25
	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 2-1/2 can.	1.81	0	...	4 ounces	7	14
	No. 10 can....	6.62	0	...	4 ounces	26	4
Frozen.....	Package.....	.75	0	.75	4 ounces	3	33
	.....do.....	2.50	0	2.50	4 ounces	10	10
	Container.....	6.00	0	6.00	4 ounces	24	4
	Can.....	15.00	0	15.00	4 ounces	60	1-2/3
	.....do.....	30.00	0	30.00	4 ounces	120	3/4
Raspberries:							
Fresh.....	Quart.....	1.50	0	1.50	3 ounces	8	13
	24-quart crate	36.00	0	36.00	3 ounces	189	1/2

See footnotes on page 67.

Table 15.--FRUITS--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Fruit	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
Berries--Con.		Pounds	Percent	Pounds		Number	Number
Raspberries--Con.							
Canned, red and black 6/	No. 303 can...	1.00	0	...	4 ounces	4	25
	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 2-1/2 can.	1.88	0	...	4 ounces	7	14
	No. 10 can....	6.75	0	...	4 ounces	27	4
Frozen.....	Package.....	.62	0	0.62	4 ounces	2-1/2	40
	.....do.....	1.00	0	1.00	4 ounces	4	25
	.....do.....	2.50	0	2.50	4 ounces	10	10
	Container.....	10.00	0	10.00	4 ounces	40	2-1/2
	Can.....	30.00	0	30.00	4 ounces	120	3/4
Strawberries:							
Fresh.....	Quart.....	1.50	4	1.44	3 ounces	7	13
	24-quart crate	36.00	4	34.56	3 ounces	182	1/2
Canned 6/.....	No. 303 can...	1.00	0	...	4 ounces	4	25
	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 10 can....	6.75	0	...	4 ounces	27	4
Frozen.....	Package.....	1.00	0	1.00	4 ounces	4	25
	.....do.....	2.50	0	2.50	4 ounces	10	10
	Container.....	6.00	0	6.00	4 ounces	24	4
	.....do.....	12.00	0	12.00	4 ounces	48	2
	Can.....	25.00	0	25.00	4 ounces	100	1
Cherries:							
Fresh, without stem.	Pound.....	1.00	6	.94	3 ounces pitted	5	20
	Quart.....	2.00	6	1.88	3 ounces pitted	10	10
	Bushel.....	64.00	6	60.16	3 ounces pitted	317	1/3
Canned 6/.....	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 2-1/2 can.	1.81	0	...	4 ounces	7	14
	No. 10 can....	6.69	0	...	4 ounces	27	4
Frozen.....	Package.....	1.00	0	1.00	Determined by use		
	.....do.....	2.50	0	2.50		do	
	Container.....	6.00	0	6.00		do	
	Can.....	15.00	0	15.00		do	
	.....do.....	30.00	0	30.00		do	

See footnotes on page 67.

Table 15.--FRUITS--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Fruit	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds		Number	Number
Cranberries:							
Fresh.....	Pound.....	1.00	0	1.00	Determined by use		
Canned.....	No. 2 can.....	1.38	0	...	1 ounce	22	5
	No. 10 can....	7.31	0	...	1 ounce	117	1
Figs:							
Fresh.....	Pound.....	1.00	5/	...	3 medium	3	34
	Box, single layer.	6.00	5/	...	3 medium	18	6
Canned 6/.....	No. 2 can.....	1.25	0	...	3 medium	5	20
	No. 2-1/2 can.	1.88	0	...	3 medium	7	14
	No. 10 can....	7.00	0	...	3 medium	25	4
Fruit cocktail or fruits for salads:							
Canned 6/.....	No. 303 can...	1.00	0	...	4 ounces	4	25
	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 2-1/2 can.	1.88	0	...	4 ounces	7	14
	No. 10 can....	6.75	0	...	4 ounces	27	4
Grapefruit:							
Fresh.....	Dozen.....	15.00	34	9.90	4 ounces	40	2-1/2
	.....do.....	15.00	5/	...	1/2 medium	24	4
	Calif. box....	68.00	5/	...	1/2 medium	108	1
	Fla. or Tex. box.	80.00	5/	...	1/2 medium	128	3/4
Canned, segments 6/...	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 3 cylinder	3.12	0	...	4 ounces	12-1/2	8
Frozen.....	Package.....	1.00	0	1.00	4 ounces	4	25
	.....do.....	2.50	0	2.50	4 ounces	10	10
	Container.....	6.00	0	6.00	4 ounces	24	4
	.....do.....	15.00	0	15.00	4 ounces	60	1-2/3
Grapefruit juice:							
Canned.....	No. 2 can.....	1.19	0	...	4 ounces 7/	5	22
	No. 3 cylinder	3.05	0	...	4 ounces 7/	12	9
	No. 10 can....	6.36	0	...	4 ounces 7/	24	4

See footnotes on page 67.

Table 15.--FRUITS--FRESH, CANNED, FROZEN, DRIED: A[illegible]oximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Fruit	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds		Number	Number
Grapes:							
Fresh.....	Pound.....	1.00	3	0.97	3 ounces pitted	5	20
	Lug.....	28.00	3	27.16	3 ounces pitted	143	3/4
	Bushel.....	48.00	3	46.56	3 ounces pitted	245	1/2
Canned 6/.....	No. 2 can.....	1.25	0	...	4 ounces	5	20
	No. 2-1/2 can.	1.88	0	...	4 ounces	7	14
	No. 10 can....	6.75	0	...	4 ounces	27	4
Lemons:							
Fresh.....	Pound.....	1.00	38	.62	8/	Determined by use	
	Dozen.....	2.60	38	1.61		do	
	Box.....	79.00	38	48.98		do	
Melons:							
Cantaloup.....	Pound.....	1.00	53	.47	3 ounces diced	2-1/2	40
	Jumbo crate...	70.00	53	32.90	3 ounces diced	173	2/3
	.....do.....	70.00	5/	...	1/4 medium	180	2/3
Honeydew.....	Pound.....	1.00	37	.63	3 ounces diced	3	30
	Crate.....	35.00	37	22.05	3 ounces diced	116	1
	.....do.....	35.00	5/	...	1/8 medium	96	1
Watermelon.....	Melon.....	25.00	5/	...	1-1/2 to 2 pound slice	13 to 17	6 or 8
Oranges:							
Fresh.....	Pound.....	1.00	28	.72	4 ounces sections	3	35
	.....do.....	1.00	5/	...	1 medium	2	45
	Dozen.....	5.40	5/	...	1 medium	12	9
	Calif. box....	77.00	5/	...	1 medium	176	2/3
	Fla. box.....	90.00	5/	...	1 medium	200	1/2
Orange juice:							
Canned, single strength.	No. 2 can.....	1.19	0	...	4 ounces 7/	5	22
	No. 3 cylinder	3.05	0	...	4 ounces 7/	12	9
	No. 10 can....	6.36	0	...	4 ounces 7/	24	4
Frozen, concentrate (canned).	4-ounce can...	.31	0	...	4 ounces 7/ 9/	4	25
	6-ounce can...	.46	0	...	4 ounces 7/ 9/	6	17
	27-ounce can..	2.08	0	...	4 ounces 7/ 9/	27	4
	32-ounce can..	2.47	0	...	4 ounces 7/ 9/	32	3

See footnotes on page 67.

Table 15.--FRUITS--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Fruit	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds		Number	Number
Peaches:							
Fresh.....	Pound.....	1.00	5/	...	1 medium	4	25
	.....do.....	1.00	12	0.88	3 ounces	5	22
	Bushel.....	48.00	12	42.24	3 ounces	222	1/2
Canned 6/.....	No. 2 can.....	1.25	0	...	2 medium halves	5	20
	No. 2-1/2 can.	1.81	0	...	2 medium halves	7	14
	No. 10 can....	6.75	0	...	2 medium halves	25	4
Frozen.....	Package.....	1.00	0	1.00	4 ounces	4	25
	.....do.....	2.50	0	2.50	4 ounces	10	10
	Container.....	10.00	0	10.00	4 ounces	40	2-1/2
	.....do.....	15.00	0	15.00	4 ounces	60	1-2/3
	Can.....	30.00	0	30.00	4 ounces	120	3/4
Dried.....	Package.....	1.00	0	1.00	5 ounces cooked	8	13
	.....do.....	2.00	0	2.00	5 ounces cooked	16	6
	Box.....	25.00	0	25.00	5 ounces cooked	200	1/2
	.....do.....	50.00	0	50.00	5 ounces cooked	400	1/4
Pears:							
Fresh.....	Pound.....	1.00	5/	...	1 medium	3	34
	.....do.....	1.00	17	.83	4 ounces	3	30
	Bushel.....	48.00	17	39.84	4 ounces	159	2/3
Canned 6/.....	No. 2 can.....	1.25	0	...	2 medium halves	5	20
	No. 2-1/2 can.	1.81	0	...	2 medium halves	7	14
	No. 10 can....	6.62	0	...	2 medium halves	25	4
Pineapple:							
Fresh.....	Pound.....	1.00	47	.53	3 ounces	3	36
	Crate.....	70.00	47	37.10	3 ounces	195	1/2

See footnotes on page 67.

Table 15.--FRUITS--FRESH, CANNED, FROZEN, DRIED: Approximate weight of purchase unit, percent refuse, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Fruit	Unit of purchase	Weight per unit A.P. 1/	Refuse 2/	Weight per unit before cooking E.P. 3/	Size of serving 4/	Servings per purchase unit	Purchase units to serve 100
		Pounds	Percent	Pounds		Number	Number
Pineapple--Con.							
Canned,	No. 2 can.....	1.25	0	...	2 small slices	5	20
sliced 6/ 10/.	No. 2-1/2 can.	1.81	0	...	1 large slice	8	13
	No. 10 can....	6.62	0	...	1 large or 2 small slices	25	4
Frozen:							
Chunks.....	Package.....	1.00	0	1.00	4 ounces	4	25
Crushed.....	.....do.....	1.00	0	1.00	4 ounces	4	25
	.....do.....	4.00	0	4.00	4 ounces	16	6
Pineapple juice:							
Canned.....	No. 2 can.....	1.18	0	...	4 ounces 7/	5	22
	No. 3 cylinder	3.02	0	...	4 ounces 7/	12	9
	No. 10 can....	6.46	0	...	4 ounces 7/	24	4
Plums:							
Fresh.....	Pound.....	1.00	5/	...	3 medium	4	25
	Suitcase lug..	16.00	5/	...	3 medium	64	1-1/2
	Crate.....	28.00	5/	...	3 medium	112	1
	Bushel.....	56.00	5/	...	3 medium	224	1/2
Canned 6/.....	No. 2 can.....	1.25	0	...	3 medium	5	20
	No. 2-1/2 can.	1.88	0	...	3 medium	7	14
	No. 10 can....	6.62	0	...	3 medium	25	4
Prunes:							
Dried.....	Package.....	1.00	5/	1.00	5 medium cooked	10	10
	.....do.....	2.00	5/	2.00	5 medium cooked	20	5
	Box.....	25.00	5/	25.00	5 medium cooked	250	1/2
	.....do.....	50.00	5/	50.00	5 medium cooked	500	1/4
Tangerines:							
Fresh.....	Pound.....	1.00	5/	...	1 medium	4	28
	1/2 strap.....	40.00	5/	...	1 medium	144	3/4

See footnotes on page 67.

Footnotes for table 15.--Fruits--fresh, canned, frozen, dried.

1/ A. P., as purchased.
2/ Based upon Composition of Foods--Raw, Processed, Prepared, U. S. Dept. Agr. Handbook No. 8.
3/ E. P., edible portion.
4/ Medium-size raw unless otherwise indicated--3 or 4 ounce serving equals approximately 1/2 cup.
5/ Refuse has not been indicated for those fruits which are served with inedible portion, as "1/2 grapefruit" served with the rind.
6/ Canned and dried fruits are served with liquid.
7/ Fluid ounces.
8/ 1 medium-size lemon yields 1/4 cup juice and 1 teaspoon grated rind.
9/ Diluted to single strength.
10/ Pineapple is also canned in chunks, crushed, and tid bits.

Table 16.--FRUITS: Approximate amount of canned product obtained from specified quantities of fresh fruit

Fruit	Fresh	Canned yield
Apples.....	2-1/2 to 3 pounds 1 bushel	1 quart 16 to 20 quarts
Berries, except strawberries...	5 to 8 cups 24-quart crate	1 quart 12 to 18 quarts
Cherries, as picked.....	6 to 8 cups 1 bushel	1 quart 22 to 32 quarts
Peaches.....	2 to 2-1/2 pounds 1 bushel	1 quart 18 to 24 quarts
Pears.....	2 to 2-1/2 pounds 1 bushel	1 quart 20 to 25 quarts
Plums.....	2 to 2-1/2 pounds 1 bushel	1 quart 24 to 30 quarts
Strawberries.....	6 to 8 cups 24-quart crate	1 quart 12 to 16 quarts

Table 17.--FRUITS, CITRUS--SIZE AND COUNT: Count per box or strap

Size of fruit	Grapefruit	Lemons	Oranges	Tangerines
	Count per box	Count per box	Count per box	Count per strap
Small.....	70, 80, or 96	442 or 490	250, 288, 300, or 324	168, 196, or 216
Medium.....	54 or 64	360 or 420	150, 176, 200, or 216	106, 120, or 144
Large.....	18, 24, 36, or 46	240, 270, or 300	80, 96, 100, or 126	48, 60, 76, or 90

Table 18.--FRUIT AND VEGETABLE JUICES: Can size and contents

Can sizes	Cans per case	Contents	Cups per can
	Number	Fluid ounces	Number
No. 2.....	24	18	2-1/4
No. 303 cylinder.....	24	19	2-1/2
No. 2 cylinder.....	24	23	3
No. 3 cylinder.....	12	46	5-3/4
No. 10.....	6	96	12

Table 19.--FRUITS AND VEGETABLES: Can size and contents

Can sizes	Cans per case	Average weight per can	Cups per can
	Number	Pounds	Number
No. 2 (vacuum pack).....	24	0.75	1-1/2 to 1-3/4
No. 1 tall.....	24	1.00	2
No. 303.....	24	1.00	2
No. 2.....	24	1.25	2-1/4 to 2-1/2
No. 2-1/2.....	24	1.81	3-1/4 to 3-1/2
No. 10.....	6	6.12 to 6.75	12 to 13

Table 20.--MILK, CHEESE, ICE CREAM: Approximate weight of purchase unit, size of serving, servings per purchase unit, and purchase units to serve 100

Milk, cheese, ice cream	Unit of purchase	Weight per unit	Size of serving	Servings per purchase unit	Purchase units to serve 100
Milk:		Pounds		Number	Number
Fluid.....	1/2-pint.....	0.54	1 cup	1	100
	Pint.....	1.08	1 cup	2	50
	Quart.....	2.15	1 cup	4	25
	Gallon.....	8.60	1 cup	16	6-1/4
Condensed.....	14-ounce can....	.88	Determined by use		
	15-ounce can....	.94		do	
Dry, nonfat.....	Package.....	1.00		do	
	Drum.....	50.00		do	
	.....do.....	200.00		do	
Dry, whole.....	Can.....	5.00		do	
	Drum.....	50.00		do	
	.....do.....	200.00		do	
Evaporated.....	6-ounce can.....	.38		do	
	14-1/2-ounce can	.91		do	
	No. 10 can.....	8.00		do	
Cream: 1/					
20 percent.....	Quart.....	2.13		do	
20 percent.....	Gallon.....	8.51		do	
25 percent.....	Quart.....	2.12		do	
25 percent.....	Gallon.....	8.48		do	
40 percent.....	Quart.....	2.10		do	
40 percent.....	Gallon.....	8.39		do	
Cheese:					
Cheddar 2/.....	Package.....	1.00	1 ounce	16	6
	Sandwich loaf...	10.00	1 ounce	160	2/3
	Longhorn.....	12.00 to 13.00	...	...	...
	Daisies.....	20.00 to 35.00	...	...	...
	Flat.....	30.00 to 33.00	...	...	...
Cottage.....	Jar.....	.75	4 ounces	3	33
	Carton.....	1.00	4 ounces	4	25
	Can.....	10.00	4 ounces	40	2-1/2
	Pail (wooden)...	50.00	4 ounces	200	1/2
Cream.....	Package.....	.50	1 ounce	8	13
	.....do.....	3.00	1 ounce	48	2
	.....do.....	5.00	1 ounce	80	1-1/4

See footnotes on page 70.

Table 20.--MILK, CHEESE, ICE CREAM: Approximate weight of purchase unit, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Milk, cheese, ice cream	Unit of purchase	Weight per unit	Size of serving	Servings per purchase unit	Purchase units to serve 100
		Pounds		Number	Number
Ice cream:					
Bulk.....	Gallon.....	4.60	No. 12 scoop	22 to 26	4
	.....do.....	4.60	No. 16 scoop	31 to 35	3
	.....do.....	4.60	No. 20 scoop	38 to 42	2-1/2
	.....do.....	4.60	No. 24 scoop	47 to 51	2
Package.....	.....do.....	5.00	1 slice	24 or 32	3-1/4 or 4-1/4

1/ Weight of a gallon of cream at temperature 50° F. The specific gravity, and hence the weight, of cream varies at different temperatures.
2/ 1 pound chopped or grated equals 1 quart.

Table 21.--MILK--WHOLE DRY, NONFAT DRY, EVAPORATED: Quantity of water to be used to reconstitute to fluid milk equivalent

Milk, whole dry or nonfat dry: 1/		
1 tablespoon.....	1/4 cup (lukewarm)	1/4 cup
2 tablespoons.....	1/2 cup (lukewarm)	1/2 cup
1/4 cup.....	1 cup (lukewarm)	1 cup
1/2 cup.....	2 cups (lukewarm)	1 pint
1 cup.....	4 cups (lukewarm)	1 quart
1 pound.....	15 cups (lukewarm)	1 gallon
Evaporated milk:		
1 pint.....	1 pint	1 quart
2 quarts.....	2 quarts	1 gallon

1/ Whole and nonfat dry milk are made, respectively, from fluid whole and skim milk with just the water removed. As a rule, fluid milk in a recipe can be replaced with either whole or nonfat milk powder. When whole milk is needed and nonfat dry milk is used, add about 3-1/4 tablespoons table fat for each quart of reconstituted milk or about 2-1/2 teaspoons for each cup.

Table 22.--MEAT, POULTRY, FISH: Approximate weight of purchase unit, size of serving, servings per purchase unit, and purchase units to serve 100

Meat, poultry, fish	Unit of purchase	Size of serving (cooked)	Servings per purchase unit	Purchase units to serve 100
Beef:			Number	Number
Corned, boneless.....	Pound.....	3 ounces	3	34
Dried.....	.....do.....	2 ounces	8	13
Ground.....	.....do.....	3 ounces	3	35
Roast:				
Chuck, boneless.....	.....do.....	3 ounces	3	32
Rib, bone in.....	.....do.....	3 ounces	2	50
Round.....	.....do.....	3 ounces	2	55
Rump.....	.....do.....	3 ounces	2	46
Steaks:				
Flank.....	.....do.....	3 ounces	4	26
Loin.....	.....do.....	3 ounces	4	26
Round.....	.....do.....	3 ounces	4	26
Stew meat, boneless....	.....do.....	3 ounces	4	26
Beef, canned:				
Corned, sliced.....	No. 1 can (0.75 pound).	3 ounces	4	25
	No. 2 can (1.50 pounds).	3 ounces	8	13
	3-pound can.....	3 ounces	16	6
	6-pound can.....	3 ounces	32	3
Corned, hash.....	1-pound can.....	3 ounces	5	19
	No. 2 can (1.50 pounds).	3 ounces	8	13
	3-1/2-pound can..	3 ounces	18	5-1/2
	5-1/2-pound can..	3 ounces	29	3-1/2
Lamb:				
Chops, loin or rib.....	Pound.....	1 chop	4	25
Leg, bone in.....	.....do.....	3 ounces	2	46
Shoulder, bone in.....	.....do.....	3 ounces	3	32
Stew meat, boneless....	.....do.....	3 ounces	3-1/3	30
Pork:				
Bacon.....	.....do.....	2 slices	10 to 12	8 or 10
Chops, loin, or rib....	.....do.....	1 chop	3	33
Ham, fresh, bone in....	.....do.....	3 ounces	2	46
Ham, smoked, bone in...	.....do.....	3 ounces	2	55
Loin, bone in.....	.....do.....	3 ounces	2	44
Sausage, bulk.....	.....do.....	2 ounces	4	25
Sausage, link.....	.....do.....	2 links	8	13
Shoulder, fresh.....	.....do.....	3 ounces	2	42
Shoulder, smoked.....	.....do.....	3 ounces	2	48
Weiners.....	.....do.....	2 weiners	4	25

Table 22.--MEAT, POULTRY, FISH: Approximate weight of purchase unit, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Meat, poultry, fish	Unit of purchase	Size of serving (cooked)	Servings per purchase unit	Purchase units to serve 100
			Number	Number
Veal:				
Chops, loin or rib.....	Pound.....	1 chop	3	33
Cutlets.....	.....do.....	3 ounces	3-1/3	30
Roast, leg, bone in....	.....do.....	3 ounces	2-1/2	40
Stew meat.....	.....do.....	3 ounces	3-1/3	30
Variety meats:				
Kidney.....	.....do.....	3 ounces	5	20
Liver.....	.....do.....	3 ounces	5	20
Tongue.....	.....do.....	3 ounces	5	20
Poultry, dressed:				
Chicken:				
Broilers.....	Broiler (about 2 pounds).	1/2 broiler	2	50 broilers
Fryers.....	Fryer (about 3 to 3-1/2 pounds).	1/4 fryer	4	25 fryers or about 75 to 85 pounds
Roasters.....	Pound.....	3 ounces (boned meat)	1/ 1-1/5 to 1-1/3	75 to 85 pounds 1/
Stewing chicken.....	.....do.....	3 ounces (boned meat)	1/ 1-1/3	75 pounds 1/
Turkey.....	.....do.....	3 ounces (boned meat)	1/ 1-1/3 to 2	50 to 75 pounds 1/
Poultry, canned, boned (chicken or turkey).	No. 3 can (2.19 pounds).	3 ounces	11-1/2	9
Fish:				
Fresh or frozen fillet:				
Cod.....	1-pound carton...	3 ounces	3-1/3	30
	5-pound carton...	3 ounces	17	6
	10-pound carton..	3 ounces	33	3
	15-pound carton..	3 ounces	50	2
	20-pound carton..	3 ounces	67	1-1/2
Flounder.....	1-pound carton...	3 ounces	3-1/3	30
	5-pound carton...	3 ounces	17	6
	10-pound carton..	3 ounces	33	3
Haddock.....	1-pound carton...	3 ounces	3-1/3	30
	5-pound carton...	3 ounces	17	6
	10-pound carton..	3 ounces	33	3
	15-pound carton..	3 ounces	50	2
	20-pound carton..	3 ounces	67	1-1/2

See footnotes on page 73.

Table 22.--MEAT, POULTRY, FISH: Approximate weight of purchase unit, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Meat, poultry, fish	Unit of purchase	Size of serving (cooked)	Servings per purchase unit	Purchase units to serve 100
			Number	Number
Fish--Con.				
Fresh or frozen fillet--Con.				
Ocean perch.....	1-pound carton...	3 ounces	3-1/3	30
	5-pound carton...	3 ounces	17	6
	10-pound carton..	3 ounces	33	3
	20-pound carton..	3 ounces	67	1-1/2
Canned:				
Mackerel.....	1-pound can.....	3 ounces	5	19
Salmon.....	1-pound can.....	3 ounces	5	19
Sardines.....	No. 1 oval (0.94 pound).	3 ounces	5	20
Tuna.....	No. 1 can (0.81 pound).	2 ounces	6-1/2	15
Shellfish:				
Crab meat:				
Canned.....	No. 1/2 can (0.41 pound).	3 ounces	2	48
Frozen.....	10-ounce carton..	3 ounces	3	31
	8-pound carton...	3 ounces	42	2-1/2
Oysters.....	Quart.....	12 small or 5 large	8	13
	Gallon.....	12 small or 5 large	32	3
Shrimp:				
Canned, wet pack 2/..	8 Z short (0.31 pound).	2 ounces	2-1/2	40
	No. 1 picnic (0.44 pound).	2 ounces	3-1/2	29
	No. 5 can (2.38 pounds).	2 ounces	19	5
Frozen.....	1-pound carton...	2 ounces	8	13
	5-pound carton...	2 ounces	40	2-1/2

1/ Varies with kind, weight, age, sex, and fatness of birds. In turkeys, very large toms usually give greatest cooked-meat yield per pound of dressed weight. Servings of boned poultry are based on sliced meat, and therefore do not include meat yield from neck, wing tips, and giblets.

2/ Declared as drained weight.

Table 23.--BEEF AND LAMB: Approximate percent edible meat 1/ from the carcass and wholesale cuts of Choice, Good, and Commercial grades of beef and lamb

Item	Grade of carcass		
	Choice	Good	Commercial
	Percent	Percent	Percent
Beef (steers ranging from 11 to 21 months in age): 2/			
Carcass	84	82	80
Wholesale cuts:			
Brisket	86	82	78
Chuck	83	81	80
Flank	99	99	99
Foreshank	58	57	53
Loin end	88	86	85
Navel	86	84	79
Round, with hindshank	81	81	80
Rump	79	77	73
Short loin	88	85	83
Standing rib	81	78	75
Lamb:			
Carcass	80	76	77
Wholesale cuts:			
Breast	74	70	70
Leg	84	82	83
Loin	86	84	84
Neck	68	65	69
Rib cut (9 ribs)	80	75	75
Shoulder (3 ribs)	81	78	80

1/ The remaining percent of: (a) beef consists of bone, ligament, and tendon; (b) lamb consists of bone and ligament.

2/ Effective December 29, 1950, the Federal grade standards for steer, heifer, and cow carcasses were revised. The change includes combining the present Prime and Choice beef grades under the name Prime, renaming the present Good grade as Choice and setting up a new grade to be called Good which will consist of beef from the higher quality young cattle now graded Commercial. Beef from the older cattle will continue to be graded Commercial.

Table 24.--PORK: Approximate percent edible meat 1/ from the carcass and wholesale trimmed cuts from hogs of three weight groups

Items	Proportions of various parts from hogs at indicated live weights at slaughter and chilled dressed weights		
	200 pounds live, 158 pounds dressed	225 pounds live, 178 pounds dressed	250 pounds live, 197 pounds dressed
Pork: 2/	Percent	Percent	Percent
Carcass	79	80	82
Wholesale cuts:			
Bacon	92	93	94
Ham	85	85	86
Head, full cut	47	50	53
Loin	78	79	79
Shoulder, full cut	84	85	86
Shoulder, ribs	40	42	45
Spareribs	58	61	63

1/ The remaining percent consists of bone and skin.
2/ The average yield of lard per hog slaughtered is 14 percent per 100 pounds live weight. This percent includes lard and rendered pork fat and excludes bacon and salt pork.

Table 25.--BEEF, LAMB, PORK, VEAL: Approximate percent of total weight of medium fat carcass represented by wholesale cuts

Wholesale cuts	Percent	Wholesale cuts	Percent
Beef (Commercial grade):		Pork:	
Chuck	24	Bacon	12
Flank	4	Ham	19
Foreshank	5	Head, full cut	9
Hindshank	4	Loin	13
Kidney and fat	2	Shoulder, full cut	17
Loin	17	Shoulder, ribs	2
Neck	1	Spareribs	2
Plate brisket	12	Other miscellaneous cuts	26
Rib	9	Total	100
Round, R and S off	18		
Rump	4	Veal (Commercial grade):	
Total	100	Forequarter	49
		Chuck	26
Lamb (Commercial grade):		Foreshank	5
Foresaddle	50	Plate	10
Breast	14	Ribs	8
Chuck	24		
Hotel rack	12	Hindquarters	48
		Flank	5
Hindsaddle	50	Loin	15
Leg	33	Round	28
Loin and flank	17		
		Kidney and kidney fat	3
Total	100	Total	100

Table 26.--POULTRY: Approximate shrinkages in dressing and eviscerating 1/

Kind and class	Live weight	Shrinkage from live to dressed weight 2/	Dressed weight	Shrinkage from dressed to ready-to-cook weight 3/	Shrinkage from live to ready-to-cook weight
	Pounds	Percent	Pounds	Percent	Percent
Chickens:					
Broilers and fryers..	Under 4	11 to 12	Under 3-1/2	26 to 30	34 to 38
Roasters.....	4 and over	9-1/2 to 11	Over 3-1/2 to over 5	22 to 27	30 to 35
Hens (stewing chickens; fowl).	All weights	10 to 11	All weights	23 to 28	31 to 36
Turkeys:					
Hens and toms.....	Under 13	10-1/2 to 11	Under 12	15 to 19	24 to 28
Hens and toms.....	13 to 25	9 to 10	12 to 22	13 to 16	22 to 28
Hens and toms.....	25 and over	9 to 9-1/2	22 and over	13 to 14	20 to 23
Ducks.....	...	...	3-1/2 to 5-1/2	20 to 25	...
Geese.....	...	...	8 to 10	18 to 19	...

1/ This table was prepared by the Poultry Branch, Production and Marketing Administration, as an aid in estimating processing shrinkages. The figures it contains are based on data assembled from various sources, including large-volume commercial operations and some studies made under laboratory conditions. Processing shrinkage varies according to the quality (or grade) of the birds, as well as their age, sex, size, and the degree of improvement through breeding for meat yield. Shrinkage is usually greater in the younger birds of any one variety and in the lighter weight birds within any class of poultry. Therefore, processing shrinkage in different plants and with different birds may vary considerably.

2/ Dressed poultry has been only bled and picked. The head, feet, and internal organs have not been removed.

3/ Ready-to-cook (eviscerated) poultry has had blood, feathers, head, feet, crop, oil glands, trachea, esophagus, entrails, reproductive organs, and lungs removed. In these figures, abdominal fat, if any, and the neck and giblets are included in ready-to-cook weight.

Table 27.--EGGS, SHELL: Approximate weights for consumer grades of shell eggs

Shell eggs (size or weight class)	Unit of purchase	Minimum net weight per dozen or case
Jumbo	Dozen	30 ounces
	Case 1/	56 pounds
Extra large	Dozen	27 ounces
	Case 1/	50-1/2 pounds
Large	Dozen	24 ounces
	Case 1/	45 pounds
Medium-sized	Dozen	21 ounces
	Case 1/	39-1/2 pounds
Small	Dozen	18 ounces
	Case 1/	34 pounds
Pee wee	Dozen	15 ounces
	Case 1/	28 pounds

1/ 30-dozen case.

Table 28.--EGGS, FROZEN PRODUCTS: Approximate shell-egg equivalents

Frozen eggs	Unit of purchase	Medium-sized eggs weighing at least 21 ounces per dozen	Large eggs weighing at least 24 ounces per dozen
	Can	Number	Number
Whole eggs	30-pounds	315	270
Yolks	30-pounds	870	760
Whites	30-pounds	485	415

Table 29.--EGGS, DRIED PRODUCTS: 1/ Quantity of water to be used with dried whole eggs, dried egg yolks, and dried egg whites

Egg product	+ Water (lukewarm)	= Approximate shell-egg equivalents	
		Medium-sized eggs weighing at least 21 ounces per dozen	Large eggs weighing at least 24 ounces per dozen
		Whole eggs (number)	
Dried whole eggs:			
2 tablespoons	2-1/2 tablespoons	1	...
4 tablespoons (1/4 cup)	5 tablespoons	2	...
6 tablespoons	7-1/2 tablespoons (about 1/2 cup)	3	...
8 tablespoons (1/2 cup)	10 tablespoons	4	...
10 tablespoons	12-1/2 tablespoons (about 3/4 cup)	5	...
12 tablespoons (3/4 cup)	15 tablespoons (about 1 cup)	6	...
14 tablespoons	18-1/2 tablespoons	7	...
16 tablespoons (1 cup)	20 tablespoons (1-1/4 cups)	8	...
1 pound	5 cups	36	32
		Egg yolks (number)	
Dried egg yolks:			
1-1/2 tablespoons	1 tablespoon	1	...
3 tablespoons	2 tablespoons	2	...
4-1/2 tablespoons (about 1/4 cup)	3 tablespoons	3	...
6 tablespoons	4 tablespoons (1/4 cup)	4	...
7-1/2 tablespoons (about 1/2 cup)	5 tablespoons	5	...
9 tablespoons	6 tablespoons	6	...
10-1/2 tablespoons	7 tablespoons	7	...
12 tablespoons (3/4 cup)	8 tablespoons (1/2 cup)	8	...
1 pound	1-3/4 cups	54	47
		Egg whites (number)	
Dried egg whites:			
1 tablespoon	2 tablespoons	1	...
2 tablespoons	4 tablespoons (1/4 cup)	2	...
3 tablespoons	6 tablespoons	3	...
4 tablespoons (1/4 cup)	8 tablespoons (1/2 cup)	4	...
5 tablespoons	10 tablespoons	5	...
6 tablespoons	12 tablespoons (3/4 cup)	6	...
7 tablespoons	14 tablespoons	7	...
8 tablespoons (1/2 cup)	16 tablespoons (1 cup)	8	...
1 pound	10-1/2 cups	100	87

1/ To measure, break all lumps. Place in measuring spoon or cup, a little at a time. Press and smooth until powder is fairly well packed and looks satiny. Make all measurements level.

Table 30.--NUTS, PEANUTS, COCONUTS: Approximate quantity of meats from 1 pound of nuts, peanuts, and cocomuts in the shell or shelled

Nuts, peanuts, cocomuts	From pound in shell	From pound shelled
	Cups	Cups
Almonds:		
Hard shell	1 (meat)	...
Soft shell	2 (meat)	...
Salted, shelled	...	3-1/2
Brazil nuts	1-1/2 (meat)	...
Cashew nuts, shelled	...	4
Coconut:		
Shredded (bulk)	...	6
Whole	2 (chopped)	...
Peanuts:		
Jumbo, shelled	...	3
Spanish, shelled	...	3-1/3
Pecans:		
Hard shell	1 (meat)	...
Hard or paper shell, shelled	...	3-1/3
Paper shell	2 (meat)	...
Walnuts, black	2/3	4
Walnuts, English:		
Halves, shelled	...	4-1/2
Hard shell	1-1/3 (meat)	...
Soft shell	1-2/3 (meat)	...

Table 31.--FLOUR, CEREALS, BAKED GOODS: Approximate weight of purchase unit, purchase units per case, size of serving, servings per purchase unit, and purchase units to serve 100

Flour and uncooked cereals

Flour and uncooked cereals	Unit of purchase 1/	Purchase units per case	Size of serving (cooked)	Servings per purchase unit	Purchase units to serve 100
	Pounds	Number	Ounces	Number	Number
Flour.....	2	25		Determined by use	
	5	10		do	
	10	5		do	
	25	1		do	
	100 (sack)	1		do	
Cereals, uncooked:					
Corn meal.....	1	24	6	16	6
	1-1/2	24	6	24	4
	2	24	6	32	3
	5	10	6	80	1-1/4
	10	5	6	160	2/3
	100 (sack)	1	...	...	...
Farina-type cereals.....	1	18	6	16	6
	1-1/2	12	6	24	4
	1-3/4	18	6	28	3-1/2
Hominy grits.....	1-1/4	24	4	25	4
	1-1/2	24	4	30	3-1/2
	100 (sack)	1	...	...	...
Macaroni.....	1/2	24	4	6	17
	1	24	4	12	8
	20	1	4	240	1/2
Rice.....	1	24	3	16	6
	10	1	3	160	2/3
Rolled oats.....	1-1/4	24	6	16	6
	2-1/2	9	6	32	3
Spaghetti.....	1/2	24	4	6-1/2	15
	1	24	4	13	8
	20	1	4	260	1/2

See footnotes on page 82.

Table 31.--FLOUR, CEREALS, BAKED GOODS: Approximate weight of purchase unit, purchase units per case, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Ready-to-eat cereals

Ready-to-eat cereals	Unit of purchase 1/	Purchase units per case	Size of serving	Servings per purchase unit	Purchase units to serve 100
	Ounces	Number	Ounces	Number	Number
Bran flakes, 40 percent..	1	50	1	1	100
	8	36	1	8	13
	12	24	1	12	8 or 9
Corn flakes.....	1	100	1	1	100
	8	36	1	8	13
	13	24	1	13	8
Puffed rice.....	5/8	50	5/8	1	100
	4-1/2	24	5/8	7	14
Puffed wheat.....	1/2	50	1/2	1	100
	4	24	1/2	8	13
Shredded wheat.....	1	50	1 (1 large biscuit)	1	100
	1-3/5	50	1-3/5 (2 small biscuits)	1	100
	12	24	1	12	8 or 9
	12	24	1	15	6 or 7
Wheat flakes.....	1	50	1	1	100
	8	36	1	8	13
	12	24	1	12	8 or 9

Baked goods

Baked goods	Unit of purchase	Weight per unit 2/	Size of serving	Servings per purchase unit	Purchase units to serve 100
		Pounds		Number	Number
Bread, loaf: 3/					
White.....	1 pound.....	1.00	1 slice	18	6
	2 pound club....	2.00	1 slice	24	4
	2 pound pullman.	2.00	1 slice	36	3
	3 pound club....	3.00	1 slice	38	3

See footnotes on page 82.

Table 31.--FLOUR, CEREALS, BAKED GOODS: Approximate weight of purchase unit, purchase units per case, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Baked Goods--Continued

Baked goods	Unit of purchase	Weight per unit 2/	Size of serving	Servings per purchase unit	Purchase units to serve 100
Bread, loaf: 3/--Con.		Pounds		Number	Number
Whole wheat.....	1 pound.....	1.00	1 slice	18	6
	2 pound club....	2.00	1 slice	24	4
	2 pound pullman.	2.00	1 slice	36	3
	3 pound club....	3.00	1 slice	38	3
Rye.....	1 pound.....	1.00	1 slice	17	6
	2 pound short...	2.00	1 slice	29	3-1/2
	2 pound long....	2.00	1 slice	36	3
Cakes:					
Layer.....	10-inch 2-layer.	3.00	3 ounces	16	6 or 7
Sheet cake.....	18 x 25 inches..	6.00	2 ounces	48	2
Cupcake.....	Dozen.....	1.50	1 cupcake	12	8 or 9
Cookies:					
Chocolate chip.....	Box.....	8.00 to 8.50	2 cookies	156 to 166	2/3
Cream filled.....	.....do.....	5.00 to 5.50	2 cookies	98 to 107	1
Fig bars.....	.....do.....	7.00	2 cookies	108	1
Gingersnaps.....	.....do.....	8.00 to 8.50	2 cookies	260 to 276	1/3
Vanilla.....	.....do.....	5.00 to 5.25	2 cookies	225 to 236	1/2
Crackers:					
Graham.....	.....do.....	11.00	2 large crackers	302	1/3
Saltines.....	.....do.....	6.00 to 6.50	2 crackers	360 to 390	1/4
Pies:					
Lemon meringue.....	8 inch.....	1.12	1/6 of pie	6	17
	9-5/8 to 9-3/4 inch.	2.50	1/8 of pie	8	13
All other.....	8 inch.....	1.25 to 1.38	1/6 of pie	6	17
	9-5/8 to 9-3/4 inch.	2.50 to 3.00	1/8 of pie	8	13
Rolls:					
Finger.....	Dozen.....	1.06	1 roll	12	8 or 9
Hard.....	.....do.....	1.25	1 roll	12	8 or 9
Pan.....	16 roll package.	.88 to 1.00	1 roll	16	6 or 7
Sandwich.....	Dozen.....	1.25 to 1.31	1 roll	12	8 or 9

1/ Package unless otherwise indicated.

2/ These are average weights and are subject to variation according to size and ingredients used.

3/ Slices 7/16 inch thick. The thickness and number of slices to the pound may vary in different localities. The number of servings per purchase unit does not include ends of crust.

Table 32.--FATS AND OILS: Approximate weight of purchase unit, purchase units per case, size of serving, servings per purchase unit, and purchase units to serve 100

Fats and oils	Unit of purchase	Weight per unit	Purchase units per case	Size of serving	Servings per purchase unit	Purchase units to serve 100
Butter: 1/		Pounds	Number	Tablespoons	Number	Number
Solid	Carton	1.00	30 or 32	1/2	64	1-1/2
	Cube	64.00	1	...	...	...
Quarters	Carton	1.00	32	1/2	64	1-1/2
Chips	do	5.00	6	2/	360	1/3
Lard	do	1.00	36	Determined by use		
	Can	50.00	1		do	
	Drum	400.00	1		do	
Margarine, colored: 1/						
Quarters	Carton	1.00	30 or 32	1/2	64	1-1/2
Chips	do	5.00	6	2/	360	1/3
Margarine, white: 1/						
Solid	do	1.00	12 or 24	1/2	64	1-1/2
Brick	do	5.00	6	1/2	320	1/3
Bulk	Container	50.00	1	...	...	...
Salad dressings:						
French dressing	Pint	1.00	24	1-1/3	24	4
	Quart	2.00	12	1-1/3	48	2
	Gallon	8.00	4	1-1/3	192	1/2
Mayonnaise	Pint	1.00	12 or 24	1	32	3
	Quart	2.00	12	1	64	1-1/2
	Gallon	8.00	4	1	256	1/2
Salad dressing, cooked	Pint	1.44	12 or 24	1	32	3
	Quart	2.88	12	1	64	1-1/2
	Gallon	11.52	4	1	256	1/2
Salad oil, vegetable	Pint	.96	24	Determined by use		
	Quart	1.92	12		do	
	1/2-gallon	3.85	12		do	
	Gallon	7.70	6		do	
	5-gallon keg	38.50	1		do	
Shortening, vegetable	Can	1.00	24		do	
	do	3.00	12		do	
	do	50.00	1		do	

1/ By mechanical device butter and margarine are cut 72 or 90 chips to the pound. By manual device they may be cut 48, 60, or 72 chips to the pound.

2/ Size of serving is 1 chip cut 72 to the pound.

Table 33.--SUGAR, SIRUPS, PRESERVES: Approximate weight of purchase unit, purchase units per case, size of serving, servings per purchase unit, and purchase units to serve 100

Sugar, sirups, preserves	Unit of purchase	Weight per unit	Purchase units per case	Size of serving	Servings per purchase unit	Purchase units to serve 100
		Pounds	Number	Tablespoons	Number	Number
Honey	Pound jar	1.00	24	2	11	9
	Quart	2.96	12	2	32	3
	5-pound can	5.00	6	2	55	2
	10-pound can	10.00	6	2	110	1
	Gallon	11.84	4	2	128	3/4
Jam	Pound jar	1.00	24	1	24	4
	No. 2 can	1.50	12	1	36	3
	No. 2-1/2 can	2.31	12	1	52	2
	No. 10 can	8.50	6	1	192	1/2
Jelly	No. 2 can	1.50	12	1	36	3
	No. 2-1/2 can	2.31	12	1	52	2
	No. 10 can	8.50	6	1	192	1/2
Marmalade	Pound jar	1.00	24	1	24	4
	No. 2 can	1.50	12	1	36	3
	No. 2-1/2 can	2.31	12	1	52	2
	No. 10 can	8.50	6	1	192	1/2
Molasses	Pound jar	1.00	24	2	11	9
	2-pound jar	2.00	12	2	22	5
	No. 2 can	1.56	12	2	18	6
	No. 2-1/2 can	2.28	12	2	26	4
	No. 10 can	9.34	6	2	96	1
	Gallon	11.75	4	2	128	3/4
Sirups:						
Corn	1-1/2-pound can	1.50	24	2	17	6
	5-pound can	5.00	6	2	56	2
	No. 10 can	8.56	6	2	96	1
	10-pound can	10.00	6	2	112	1
	Gallon	11.72	4	2	128	3/4
Maple	1-1/2-pound can	1.50	24	2	18	6
	Gallon	11.00	4	2	128	3/4
Sugar-cane	do	11.34	4	2	128	3/4
Sugars:						
Brown	Pound	1.00	24	Determined by use		
	100 pounds	100.00	1	do		

Table 33.--SUGAR, SIRUPS, PRESERVES: Approximate weight of purchase unit, purchase units per case, size of serving, servings per purchase unit, and purchase units to serve 100--Continued

Sugar, sirups, preserves	Unit of purchase	Weight per unit	Purchase units per case	Size of serving	Servings per purchase unit	Purchase units to serve 100
Sugars--Con.		Pounds	Number	Tablespoons	Number	Number
Granulated.....	Pound.....	1.00	24	2/3	50	2
	2 pounds.....	2.00	25	2/3	100	1
	5 pounds.....	5.00	12	...	...	...
	10 pounds.....	10.00	6	...	...	...
	100 pounds.....	100.00	1	...	...	...
Powdered.....	Pound.....	1.00	24	Determined by use		
	100 pounds.....	100.00	1		do	

Table 34.--MISCELLANEOUS FOODS: Approximate weight of purchase unit, purchase units per case, and quantity to serve 100

Miscellaneous foods	Unit of purchase	Weight per unit	Purchase units per case	Pounds to serve 100
		Pounds	Number	Number
Baking powder.....	Can.....	1.00	12 or 24	Determined by use
	.....do.....	2.00	12	do
	.....do.....	5.00	6	do
	.....do.....	10.00	4	do
Baking soda.....	Package.....	.50	48	do
	.....do.....	.75	24	do
	.....do.....	1.00	24	do
Catsup.....	14-ounce bottle.	.88	24	do
	No. 2 can.....	1.31	24	do
	No. 2-1/2 can...	1.88	24	do
	No. 10 can.....	6.94	6	do
Chocolate.....	Package.....	.50	12, 24, or 48	1-1/2 (beverage)
	Slab.....	10.00	5	1-1/2 (beverage)
Cocoa.....	Box.....	.50	24	1-1/2 (beverage)
	.....do.....	1.00	12 or 24	1-1/2 (beverage)
	.....do.....	5.00	24	1-1/2 (beverage)
Coffee:				
Roasted, ground.....	Jar or can.....	1.00	24	2-1/2 to 3 (beverage)
	Bag.....	1.00	12 or 30	2-1/2 to 3 (beverage)
	Can.....	3.00	6	2-1/2 to 3 (beverage)
Soluble.....	.....do.....	.25	24	Determined by use
	.....do.....	.75	12	do

Table 34.--MISCELLANEOUS FOODS: Approximate weight of purchase unit, purchase units per case, and quantity to serve 100--Continued

Miscellaneous foods	Unit of purchase	Weight per unit	Purchase units per case	Pounds to serve 100
		Pounds	Number	Number
Coffee bean, roasted...	Sack.....	80.00	1	Determined by use
	.....do.....	100.00	1	do
Cornstarch.....	Package.....	1.00	24 or 48	do
	.....do.....	5.00	1	do
	.....do.....	10.00	1	do
	.....do.....	25.00	1	do
Extracts.....	Pint.....	1.00	24	do
	Quart.....	2.00	12	do
	Gallon.....	8.00	4	do
Gelatin, plain.....	1-ounce package.	.06	12, 24, or 36	3/4 (dessert)
	Package.....	1.00	12	3/4 (dessert)
	.....do.....	5.00	6	3/4 (dessert)
Gelatin dessert powder.	3-1/2-ounce package.	.22	12, 72, or 144	4 (dessert)
	26-ounce package	1.62	12	4 (dessert)
Mustard:				
Dry.....	Can.....	1.00	1	Determined by use
	.....do.....	5.00	1	do
Prepared.....	Jar.....	1.00	12 or 24	do
	.....do.....	2.00	12	do
	Gallon.....	9.50	4	do
Olives.....	Pint.....	1.12	24 or 48	do
	Quart.....	2.25	24	do
	Gallon.....	9.00	4	do
Peanut butter.....	Jar.....	1.00	12	14
	Tin.....	5.00	6	14
	.....do.....	25.00	1	14
	.....do.....	50.00	1	14
Pepper.....	Can.....	1.00	6 or 12	Determined by use
	.....do.....	6.00	1	do
	Drum.....	50.00	1	do
Pickle, relish.....	Pint.....	1.13	12	do
	Quart.....	2.26	12	do
	Gallon.....	9.04	4	do

Table 34.--MISCELLANEOUS FOODS: Approximate weight of purchase unit, purchase units per case, and quantity to serve 100--Continued

Miscellaneous foods	Unit of purchase	Weight per unit	Purchase units per case	Pounds to serve 100
		Pounds	Number	Number
Pickles:				
Sour or dill.....	Pint.....	1.08	12	Determined by use
	Quart.....	2.16	12	do
	Gallon.....	8.64	4	do
Sweet.....	Pint.....	1.22	12	do
	Quart.....	2.44	12	do
	Gallon.....	9.76	4	do
Postum, instant.....	Can.....	.25	24	do
	.....do.....	.50	12	do
Salt.....	Box.....	2.00	24	do
	Bag.....	25.00	1	do
	.....do.....	100.00	1	do
Spices.....	Can.....	1.00	6 or 12	do
	.....do.....	6.00	1	do
Tea:				
Ball:				
Cup size.....	Package (200 balls).	1.00	10	1/2
1 to 2 gallon size.	Package (5 balls).	.31	10	Determined by use
Bulk.....	Can.....	1.00	6	1/2
	.....do.....	6.00	1	1/2
	.....do.....	20.00	1	1/2
	Half chest.....	45.00 to 80.00	1	1/2
	Chest.....	85.00 to 100.00	1	1/2
Vinegar.....	Quart.....	2.00	12	Determined by use
	Gallon.....	8.00	4	do
Worcestershire sauce...	Bottle.....	.75	12 or 24	do
	Gallon.....	8.00	4	do
Yeast, compressed.....	1-pound block...	1.00	50	do
Yeast, dried (active granular).	Drum.....	50.00	1	do
	.....do.....	100.00	1	do

To Compute Units Needed to Serve 100 With Portions of Various Sizes

The number of purchase units needed to serve 100 persons, as given in Appendix E tables, is based on a specified size of serving. For example, table 13 shows that for 3-ounce servings of snap beans, 5 No. 10 cans are required. When the size of serving is different from that specified, the number of purchase units can be computed by using the conversion factors in table 35.

The figures in the left-hand column of the conversion table represent the serving sizes given in the purchase tables. The figures across the top represent serving sizes that may be desired. If a 4-ounce instead of a 3-ounce serving of canned snap beans is to be used, for example, find the 3-ounce line in the left-hand column of the conversion table. Follow this line across to the factor in the 4-ounce column of "Serving size desired." Multiply this factor (1.33) by the number of purchase units (5 No. 10 cans) given for 100. Thus: 5 (No. 10 cans) x 1.33 = 6.65 No. 10 cans, (round to 7 No. 10 cans) to serve 100 people each a 4-ounce serving.

Serving sizes in the purchase tables are sometimes given in terms of tablespoons, cups, slices, etc. Any of these measures can be substituted for ounces in this conversion table and the same computations performed.

Table 35.—Conversion factors for computing the number of purchase units needed for servings of various sizes

Serving size given in purchase tables (ounces)	Conversion factors for specified serving size									
	1 ounce	2 ounces	3 ounces	4 ounces	5 ounces	6 ounces	7 ounces	8 ounces	9 ounces	10 ounces
1	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
2	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
3	.33	.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33
4	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
5	.20	.40	.60	.80	1.00	1.20	1.40	1.60	1.80	2.00
6	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67
7	.14	.29	.43	.57	.71	.86	1.00	1.14	1.29	1.43
8	.12	.25	.38	.50	.62	.75	.88	1.00	1.12	1.25

Equivalents Useful for Figuring Food Quantities

Ounce equivalents in decimal parts of pound

Ounces	Pound	Ounces	Pound
1	0.06	9	0.56
2	.12	10	.62
3	.19	11	.69
4	.25	12	.75
5	.31	13	.81
6	.38	14	.88
7	.44	15	.94
8	.50	16	1.00

Approximate scoop equivalents

Scoop No. 1/	Level measure	Scoop No. 1/	Level measure
6	2/3 cup	20	3-1/5 tablespoons
8	1/2 cup	24	2-2/3 tablespoons
10	2/5 cup	30	2-1/5 tablespoons
12	1/3 cup	40	1-3/4 tablespoons
16	1/4 cup		

1/ A serving spoon may be used to replace a scoop. Since serving spoons are not identified by number, it is necessary to measure or weigh the quantity of food from sizes of spoons used to obtain the approximate serving size desired.

Common food measure

3 teaspoons	1 tablespoon	16 tablespoons	1 cup
2 tablespoons	1 fluid ounce	1 cup	8 fluid ounces
4 tablespoons	1/4 cup	2 cups	1 pint
6 tablespoons	3/8 cup	2 pints	1 quart
8 tablespoons	1/2 cup		

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