

Appendix C. Food Store Survey Instrument and Materials

C.1 Steps to Get You Started When Conducting a Food Store Survey

USDA’s Economic Research Service (ERS) has developed a food store survey instrument to help you assess the availability and affordability of food in retail outlets in your community. The following tools are provided:

- Step-by-step guide to survey preparation
- Data collection instructions
- Data analysis instructions
- Survey instrument

C.2 Survey Preparation Guide

This survey preparation guide contains information on the following topics:

- Store selection
- Sampling procedures
- Informing store managers

Store Selection

The first step in conducting a food store survey is to decide which stores you will include in the survey. Consult the data that you entered into tables 5-8. These data will tell you the number, type, and location of food stores in your community and, in some cases, total food stamp redemptions. They will serve as a basis for your selection of specific stores to be interviewed. Where resources are limited, it may be a good idea to limit your food store survey to supermarkets and large grocery stores.

Box C-1		
Distribution of Food Stamp Authorized Retailers and Food Stamp Redemptions by Store Type, 1996–1998		
Type of Store	Percentage of All	
	Stores	Redemptions
Supermarket	14.9	78.3
Large Grocery	7.0	5.8
Small Grocery	20.0	5.2
Convenience	26.8	3.3
Specialty	9.0	3.7
Gas/grocery	11.9	1.2
Other types	10.4	2.5
Total	100.0	100.0

Source: T. Macaluso, “The Extent of Trafficking in the Food Stamp Program: An Update,” Office of Analysis and Evaluation, Food and Nutrition Service, USDA, March 2000.

Once you've decided what type of store(s) to survey, you will have to determine whether you have the resources to visit all food stores in your community or whether it will be necessary to select a sample of the stores to visit. ERS estimates that it will take between 30 minutes to 1 hour to conduct a food store survey depending on the experience level of the data collector and the store size.

If sampling is necessary, determine a total number of stores that you will be able to visit in each category. Then, follow the sampling instructions provided in the next section.

Sampling Procedures

Assume that the following is an alphabetized of supermarkets and large grocery stores in your community:

Flanagan's	Shop'N Fresh
Food Lion	Shoppers Food Warehouse
Giant	Shopper's World
Price Chopper	Super Fresh
Piggly Wiggly	The Grocery Mart
Safeway	
Shop & Stop	

There are enough resources to interview only four stores. To determine which stores will be visited follow the procedure below:

- A count of the stores (from the alphabetized list) indicates that there are 12 grocery stores in your community.
- Since only 4 are to be included in the sample, 12 is divided by 4. The resulting number, called the sampling number, is 3.
- Beginning at the top of the list, the providers are counted and marked by three's.
- Each store marked with a "3" is a provider to be interviewed. The providers in **bold** below are those selected for an interview:

Flanagan's	1	Shop & Stop	1
Food Lion	2	Shop 'N Fresh	2
Giant	3	Shoppers Food Warehouse	3
Price Chopper	1	Shopper's World	1
Piggly Wiggly	2	Super Fresh	2
Safeway	3	The Grocery Mart	3

After you have selected the stores to be surveyed, it would be good to start developing your tracking system for the survey, especially for recording all the information about stores that have agreed to participate and the identification (ID) number assigned to them. See the table below.

Table C.1. Store Survey Tracking System

Store name	Store type	Store ID number	Letter of introduction mailed (date)	Followup phone call (date)	Data collected (date)	Name of data collector
Giant	Supermarket	01				
Flanagans	Large grocery	02				
Shoppers World	Large grocery	03				
Safeway	Supermarket	04				

Informing the Store Manager

The way in which you approach food store managers to ask permission to conduct surveys in their stores is key to gaining their compliance. Guidelines for a sample introductory letter are provided below. However, since each community is unique, you may find that you want to change some or all of these procedures to those that you think will work best in your community.

The introductory letter...

- Send a letter to the grocery store managers/owners to explain the study and to ask for permission to survey their grocery store.
- Keep a copy of this letter to present to the manager/owner upon arrival at the store for the survey.
- For stores that are members of a regional or national grocery chain, call the chain's headquarters to find the appropriate person to contact. Write a letter to the representative from headquarters to explain the study.
- Request that permission to collect the data be sent to you in a letter written on company letterhead.
- Follow up with a letter to the manager/owner of the individual store to be surveyed. (Include a copy of the letter from headquarters).

About a week before the survey...

- Follow up on your letters by calling the grocery store manager/owner.
- Reiterate the purpose of the data collection and assure store managers/owners that you are in no way evaluating the store or its policies.
- Relieve any anxieties that the managers/owners may have about their participation by providing the following assurances: (1) the store name, policies, and prices will not be published or publicized; (2) interviewers will not disrupt the normal flow of business by speaking with customers or employees; and (3) staff involvement in the survey process will be kept to a minimum.

- Inform store managers/owners that findings from individual stores will be completely confidential. Assure them that the information gathered from individual stores will be combined with that from many other stores and that the final results will be reported in statistical form only (i.e., percentages and totals). NOTE: Every member of the research team must adhere to the rules of confidentiality. This means that team members must never divulge names or factual information about any store survey.
- Arrange for a date and time for the surveyor’s arrival. (If the name of the surveyor(s) is known at this time, provide the manager with this information as well.)
- Explain the manager’s/owner’s role in the survey process. Ideally, it will be to
 - Meet with the surveyor(s) for about 5 minutes before data collection to allow the surveyor to repeat the purpose of data collection
 - Meet with the surveyor(s) at the end of data collection to answer questions about items that were not found or were unavailable on the day of the visit

C.2 Instructions for Data Collection

Begin your data collection by filling in the information requested on the cover page of the Food Store Survey form on page 154. The item “Store Type” should be filled in using the definitions in appendix A, box A-2. The “Store ID Number” should be taken from the store survey tracking system. (See table C.1 on the previous page.)

Food Availability

The food items on the survey instrument were selected to be representative of foods commonly eaten by low-income households and to meet Federal dietary guidelines and Food Guide Pyramid serving recommendations for a family of four (two adults aged 20 to 50 and two children aged 3 to 5 and 6 to 11) for 1 week. It is strongly recommended that no substitutions be made to the listed food items in order to maintain the integrity of the survey in terms of dietary recommendations, food groups, and the basic Thrifty Food Plan recipes that were used as a basis for the store survey list.

However, we recognize that each region or community may have specific food preferences and that certain items on the survey list may not be available in the community. Box C-1 lists some possible substitutions for selected food items. Although these substitutions do not reflect official USDA dietary recommendations, they may, in some cases, allow the survey to better represent food access in special communities. If the decision is made to make substitutions, it is important that changes be consistent throughout the community (i.e., information on the same set of items must be collected from each store). To ensure this consistency, you should revise the list of food items in the survey instrument provided in the toolkit to reflect these substitutions.

The survey instrument includes the unit of measure that should be selected for each food item. For example, potatoes are measured in pounds, eggs are measured by the dozen, peaches are measured in a 29-ounce can. Package sizes were selected to approximate the quantity of each item needed to prepare the Thrifty Food Plan recipes on which the food list is based. Package sizes were also

selected to provide consistency across store types in product selection. The purpose of this approach is to limit measured price difference due solely to differences in the package size of items offered for sale. Alternatively, a pricing methodology that selects the lowest priced item in a food category, without regard to package size, will often result in a comparison of small sizes of branded items in small food stores to large sizes and private-label or generic items in large supermarkets.

Missing Items

If an item is not available in the package size listed, you may substitute another size, but be sure to note the new package size on the survey instrument in the column titles “Item Weight/Unit (actual).” If it appears that the item is usually available but out of stock on the day of your visit, record the price of that item, but note that it was missing by putting the letter “m” next to the price. You may also find it useful to check the status of such items with the store manager.

If an item is not available at all, in any package size, and is not usually stocked by the store, record an “NA” in the column labeled “Price.”

Box C-2		
List of Food Items and Possible Substitutions for Food Store Survey Instrument		
Survey Food Item	Thrifty Food Plan Food Group	Suggested Substitute(s)
Fresh fruits and vegetables	Fruits and vegetables	
Apples, any variety	Noncitrus fruits and juices	
Bananas	"	Plantains
Grapes (green/red)	"	
Melon (cantaloupe, honeydew, watermelon, other)	Citrus fruits, melon, berries, and juices	
Oranges, any variety	"	Grapefruit
Carrots	Dark green/deep yellow vegetables	
Celery	Other vegetables	
Green pepper	"	
Lettuce, looseleaf (green/red)	Dark green/deep yellow vegetables	Spinach; romaine lettuce, collard, mustard, turnip or beet greens; chard; bok choy ¹
Onions, yellow	Other vegetables	
Potatoes, any variety	Potato products	
Tomatoes, any variety	Other vegetables	
Canned fruits and vegetables	Fruits and vegetables	
Oranges, mandarin, juice or light syrup	Citrus fruits, melon, berries, and juices	Strawberries, frozen; blueberries, frozen
Peaches, juice or light syrup	Noncitrus fruits and juices	Pears, juice or light syrup
Mushrooms, pieces	Other vegetables	Mushrooms, whole
Spaghetti sauce	"	Salsa
Tomato sauce	"	Salsa
Frozen fruits and vegetables	Fruits and vegetables	

Box C-2		
List of Food Items and Possible Substitutions for Food Store Survey Instrument		
Survey Food Item	Thrifty Food Plan Food Group	Suggested Substitute(s)
Orange juice, concentrate	Citrus fruits, melon, berries, and juices	Grapefruit juice concentrate
Broccoli, chopped	Dark green/deep yellow vegetables	Spinach, chopped, kale chopped, collard, mustard, beet, turnip greens, chopped, frozen
Green beans, any variety	Other vegetables	Corn; okra; snow peas; frozen
Green peas, any variety	Other vegetables	Corn; okra; snow peas, frozen
French fries, any variety	Potato products	
Breads, cereals, other grain products	Grains	
Bread, white, enriched	Breads, yeast and quick	Flour tortillas, enriched; pita bread, white, enriched
Bread, whole wheat, enriched	"	Corn tortillas, enriched; whole-wheat pita bread, enriched
Hamburger buns, enriched	"	Flour tortillas, enriched; pita bread, enriched
Dinner rolls, enriched	"	Flour tortillas, enriched; pita bread, enriched
French or Italian-style bread, enriched	"	Flour tortillas, enriched; pita bread, enriched
Bagels, plain, enriched	"	English muffins, plain, enriched
Bread crumbs, plain	"	Bread crumbs, flavored
Ready-to-eat cereal, corn flakes	Breakfast cereals, cooked and ready to eat	Ready-to-eat cereal, bran flakes
Ready-to-eat cereal, toasted oats	"	
Macaroni, elbow style, enriched	Rice and pasta	Macaroni, any style, enriched; Asian-style noodles, enriched
Noodles, yolk-free, enriched	Rice and pasta	Macaroni, any style, enriched; Asian-style noodles, enriched
Popcorn, microwave, unpopped	Grain-based snacks and cookies	Regular popcorn
Rice, white, long grain, enriched	Rice and pasta	Rice, white, short grain, enriched
Spaghetti, any variety, enriched	"	Macaroni or pasta, any style, enriched; Asian-style noodles, enriched
Dairy products	Milk products	
Milk, 1% lowfat	Lower fat skim milk and lowfat yogurt	Milk, skim

Box C-2**List of Food Items and Possible Substitutions for Food Store Survey Instrument**

Survey Food Item	Thrifty Food Plan Food Group	Suggested Substitute(s)
Milk, whole	Whole milk, yogurt, and cheese	Milk, 2% fat
Cheese, cheddar, any variety	Cheese	
Cheese, cottage, lowfat	"	
Cheese, mozzarella, part skim, whole style, not shredded	"	Cheese, mozzarella, part skim, shredded
Evaporated whole milk	Whole milk, yogurt, and cream	Evaporated skim milk
Meat and meat alternates, fresh	Meat/meat alternates	
Beef, ground, lean	Beef, pork, veal, lamb and game	Do not substitute regular ground beef ²
Chicken fryer, cutup or whole	Chicken, turkey, and game birds	Chicken, any style
Chicken thighs, boneless, skinless	"	Chicken, any skinless, boneless style
Turkey, ground	"	Tofu, any style ³
Pork, ground	Beef, pork, veal, lamb, and game	Beef, ground, lean ² ; tofu, any style
Turkey ham	Bacon, sausages, and luncheon meats	Tofu, any style
Meat and meat alternates, frozen or canned	Meat/meat alternates	
Fish, flounder or cod, frozen	Fish and fish products	Sole, whiting, catfish, bass, perch, croaker, walleye, grouper, haddock, pollock, monkfish, rockfish, snapper
Tuna fish, chunk style, water packed, canned	"	
Beans, garbanzo, chickpeas, canned	Dry beans, lentils, peas, and nuts	Black beans, red beans, navy beans, canned
Beans, kidney, canned	"	Black beans; red beans, canned
Beans, baked, vegetarian, canned	"	Baked beans with pork, canned
Fats and oils	Other foods	
Margarine, stick style	Table fats, oils, and salad dressings	
Shortening, vegetable	"	
Salad dressing, mayonnaise type	"	Regular mayonnaise
Vegetable oil, any type	"	
Sugars and sweets	Other foods	
Sugar, brown (dark or light)		
Sugar, powdered	Sugars, sweets, and candies	

Box C-2		
List of Food Items and Possible Substitutions for Food Store Survey Instrument		
Survey Food Item	Thrifty Food Plan Food Group	Suggested Substitute(s)
Sugar, white, granulated	"	
Jelly, grape	"	Jelly or jam, any flavor
Molasses, any type	"	
Pancake syrup, any type	"	
Chocolate chips, semi-sweet	"	
Fruit drink, refrigerated, any flavor	Fruit drinks, soft drinks, and ades	
Fudgesicles, ice milk	"	Sherbet, any flavor; any other lowfat frozen dessert
Spices and condiments	Other foods	
Baking powder	Gravies, sauces, condiments, spices, and salt	
Baking soda	"	
Chili powder	"	
Cinnamon	"	
Cumin	"	
Onion powder	"	
Garlic powder	"	
Italian herb seasoning	"	Any herb seasoning
Oregano	"	
Paprika	"	
Black pepper, ground	"	
Salt, any type	"	
Vanilla, any type	"	
Chicken bouillon, reduced sodium, cubes	"	Beef bouillon, reduced sodium, cubes; vegetable bouillon, reduced sodium, cubes
Catsup, any type	"	Salsa
Soy sauce, reduced sodium	"	
Lemon juice, bottled	"	Lime juice, bottled
Gelatin, powdered, unflavored	"	
Chocolate drink mix, powdered	"	

¹Do not substitute iceberg lettuce, which is considerably less nutrient dense than looseleaf lettuce or the suggested substitutes.

²Do not substitute regular ground beef because it has 35 percent more fat than lean ground beef.

³Do not substitute lean or extra lean ground beef because they are more than twice as high in fat as ground turkey or tofu.

Food Pricing

When selecting and pricing items contained on the store shelves, always select the least expensive food item in the package size listed. To ensure that the item you're selecting is the least expensive, we recommend that you do the following:

- If an item is on sale, check to see if the sale price is the cheapest or if there is another item that is cheaper. Choose the least expensive item. If you choose the sale item, record an "S" beside the price.
- Always make sure that you look at generic or store brands in selecting the least expensive food item.
- If you come to a bulk food section, make sure you check the bulk per pound or per unit price to packaged foods found in other aisles, and select the least expensive.
- If unit pricing is available, always use the unit price code to select the cheapest food item in the appropriate package size.
- Record the price of the item based on the survey question. For example, if you are asked to record the price of a pound of green peppers and the store sells them by the piece, you will have to calculate how many green peppers are in a pound and then convert the "piece price" to that of a pound.

Closing Procedures

After the data have been collected, make sure that all food items for which you are responsible have been accounted for. In other words, check to ensure that all items are completed on the survey form. Checking off food items as you go along is a good way to make sure that you don't miss anything. Thank the manager for allowing you to survey the store, and make sure that you have the store manager's name so that a letter of thanks can be sent to the manager after you have returned to your office.

C.4. Instructions for Data Analysis

Analysis of Availability

The first step in analyzing the availability of the toolkit market basket in your community is to code the data in a systematic format. Use a spreadsheet or columnar paper with the columns designating each store surveyed and the rows for food items. Under a given store's column, record the price for each item observed. If an item was missing in the store mark an "x" in the appropriate row. If you surveyed more than one store, type, e.g., supermarkets, convenience stores, etc. divide your completed food store surveys into store, type. Conduct a separate analysis of food availability for each store type.

1. What is the total number of missing items?

Assume that you visited five supermarkets in your community. To calculate the total number of items missing from each store, count the number of "x's" in that store's column. Let's assume that the total number of missing items for the stores surveyed is as follows:

Store 1:	11
Store 2:	15
Store 3:	13
Store 4:	14
Store 5:	10

2. What is the average number of missing items?

To calculate the average number of missing items across all five stores, add the number of missing items for all stores and divide by the total number of stores surveyed:

$$(11 + 15 + 13 + 14 + 10) \div 5 = 12.6$$

The average number of missing items across all 5 stores is 12.6 (the total number of missing items in each store divided by the total number of stores).

3. What is the percentage of items missing in each store?

To calculate the percentage of items missing in each store, divide the number of missing items per store by the total number of items on the survey (87) and multiply by 100. For example to calculate the percent of items missing in Store 1, divide 87 (the total number of items on the survey) by 11 (the total number of items missing in store 1):

$$(11/87) \times 100 = 12.6\%$$

- Store 1: 12.6%**
- Store 2: 17.2%**
- Store 3: 14.9%**
- Store 4: 16.1%**
- Store 5: 11.5%**

To find the average percentage of missing items across all stores, add the percentages for stores 1 through 5 and divide by the total number of stores:

$$(12.6 + 17.2 + 14.9 + 16.1 + 11.5) \div 5 = 14.5\%$$

4. How many stores are missing individual food items?

Calculating the individual food items most frequently missing across all stores will tell you whether the availability of particular food items may be limited in your community. Assume that the most frequently missing items were mandarin oranges and bread crumbs (missing in four of the five stores). Fresh melon, lean ground beef, ground turkey, vegetarian baked beans, fudgesicles, and chicken bouillon cubes were the next most frequently missing items (missing in three of the five stores surveyed).

5. What is the percentage of missing items in each food category?

Another variable of interest is the number of missing items in individual food categories (fresh fruits, meats and meat alternates, etc). To calculate the percentage of missing items in each food

category, first calculate the percentage of missing items in each food category for each store. For example, to find the number of missing items in the fresh fruit category in store 1, add the number of “x’s” in the fresh fruits column for store 1. In this case, store 1 was missing only apples, so the total number of “x” is 1. To find the percentage of missing items in the fresh fruits category in store 1, divide the number of missing items by the total number of items surveyed (five in the case of fresh fruits). The percentage of missing fresh fruit items in store 1 is 20 percent:

$$(1/5) \times 100 = 20\%$$

Continue for the other stores. When you have calculated the percentage of missing items in the fresh fruits category for each store, average them as described below to find the percentage of missing items in the fresh fruits category across all stores:

Store 1: 20%

Store 2: 20%

Store 3: 40%

Store 4: 40%

Store 5: 0%

The percentage of missing items in the fresh fruits category is the sum of the percentage of missing items in each store divided by the total number of stores, or 24 percent:

$$(20 + 20 + 40 + 40 + 0) \div 5 = 24\%$$

6. How do I make comparisons about missing items across food categories?

Comparing the percentage of missing items from the fresh fruits category with the percentage missing from other food categories will help you to know whether the availability of whole categories of food may be a problem in your community. For example, let’s assume that the percentage of missing items in each food category is as follows:

Fresh fruits	24%
Fresh vegetables	7%
Canned fruit	50%
Canned vegetables	0%
Frozen fruits and vegetables	16%
Breads, cereals, and other grain products, fresh	10%
Breads, cereals, and other grain products, dry	18%
Dairy products	7%
Meat and meat alternates, fresh	26%
Meat and meat alternates, frozen and canned	28%

Fats and oils	10%
Sugars and sweets	13%
Condiments and spices	9%

The following categories were missing the largest share of items:

Meat and meat alternates, frozen and canned	28%
Meat and meat alternates, fresh	26%
Fresh fruits	24%

You also may want to come up with your own food categories for analysis. Some suggestions include total fruits and vegetables; total fruits; total vegetables; lean meats, poultry, and fish; dark green leafy vegetables; and whole grains.

To make these new food categories, add together the following:

Total fruits and vegetables:

Fresh fruits +
Fresh vegetables +
Canned fruit +
Canned vegetables +
Frozen fruits and vegetables

Total fruits:

Fresh fruits +
Canned fruits +
Orange juice (frozen)

Total vegetables:

Fresh vegetables +
Canned vegetables +
Broccoli (frozen) +
Green beans (frozen) +
French fries (frozen)

Lean meats, poultry, and fish:

Ground beef, lean (meat and meat alternates, fresh) +
Chicken, fryer (meat and meat alternates, fresh) +
Turkey, ground (meat and meat alternates, fresh) +
Chicken thighs (meat and meat alternates, fresh) +
Pork, ground (meat and meat alternates, fresh) +
Turkey ham (meat and meat alternates, fresh) +
Fish, flounder or cod, frozen (meat and meat alternates, frozen and canned)

Dark green leafy vegetables:

Leaf lettuce (fresh vegetables) + Broccoli (frozen fruits and vegetables)

Whole grains:

- Whole wheat bread (bread, cereals, and other grain products, fresh) +
- Toasted oats (bread, cereals, and other grain products, dry) +
- Popcorn, microwave (bread, cereals, and other grain products, dry)

Analysis of Food Prices

The first step in analyzing the cost of the toolkit market basket in your community is to record the prices of individual food items from all store surveys.

If you surveyed more than one store type (e.g. supermarkets, convenience stores, etc.), group your completed food store surveys into store type. Conduct a separate analysis of food costs for each store type.

For each store visited, the price of each item can be found in the appropriate row of your spreadsheet or columnar table. In the example provided, apples cost the following per pound in each store surveyed:

- Store 1: \$1.29**
- Store 2: \$0.99**
- Store 3: \$0.99**
- Store 4: \$0.99**
- Store 5: \$0.89**

1. What is the average price of individual food items across all stores?

The average price per pound for apples across all stores is the sum of the prices in all five stores divided by the total number of stores, or \$1.03.

$$(\$1.29 + 0.99 + 0.99 + 0.99 + 0.89) \div 5 = \$1.03$$

2. What is the average price per unit of each food category across all stores?

The average price for each food category in each store is the sum of all of the prices of the individual food items in each store divided by the total number of items in that food category.

In our example, the average price per pound for the fresh fruits category for store 1 is the sum of the prices for apples, bananas, grapes, melons, and oranges.

$$(\$1.29 + \$0.59 + \$1.99 + \$0.59 + \$1.50) \div 5 = \$1.19$$

3. How does the average price for an individual food item differs across stores?

Now that you have calculated an average per unit price for an individual food item and food category, you can determine how prices for those items differ across stores in different parts of your community. This can be done by calculating the percentage difference between prices in different stores.

For example, to calculate the percentage difference in apple prices per pound between store 1 and store 2, calculate the difference between the two numbers, divide the difference by the price for store 1, and multiply by 100:

$$(\$0.99 - 1.29) \div \$1.29 \times 100 = -23\%$$

In other words, the price per pound of apples in store 2 is 23 percent lower than the price of apples in store 1.

To calculate the difference between the price of apples in each of the five stores and the average price of apples across all stores, subtract the average price from the price of apples in each store then divide by the average price and multiply by 100. For example, when you compare the price of apples in store 1 with the average price of apples across all five stores, you discover that the price of apples in store 1 is 25 percent higher than the average price for apples across all stores:

$$(\$1.29 - \$1.03) \div \$1.03 \times 100 = 25\%$$

The price of apples in store 1 is 25 percent higher than the average price of apples across all stores.

4. How does the average price for an entire food category differs across stores?

Use the same procedure to calculate differences in prices across food categories. For example, to calculate the percentage difference in the average price of fresh fruits between store 1 and store 2, calculate the difference between the two numbers, divide the difference by the price for store 1, and multiply by 100:

$$(\$1.03 - \$1.00) \div \$1.03 \times 100 = 3\%$$

The price of fresh fruits in store 1 is 3 percent higher than the price of fresh fruits in store 2.

Calculating the TFP cost of the Toolkit Market Basket

Comparing the per unit price of food items or food categories across stores provides you with useful information about the cost of purchasing a market basket of foods in different parts of your community and in different store types. However, to determine whether such prices are affordable to low-income households it is necessary to compare costs in individual stores with a national benchmark appropriate for low-income households. In this section, you will learn how to compare the cost of the toolkit market basket with a national reference price for USDA's Thrifty Food Plan (TFP).

Multiply the prices for individual food items by the amount of that food used in the preparation of the Thrifty Food Plan week 2 food list (Box C-2). For example, the TFP food list calls for the following amounts of fresh fruits:

Apples	1 lb 4 oz
Bananas	2 lb 2 oz
Grapes	1 lb 8 oz
Melon	1 lb
Oranges	4 lb 12 oz

The TFP cost of purchasing apples at store 1 is the price per pound of the apples multiplied by the total number of apples on the TFP food list:

$$\mathbf{\$1.29 \times 1.250 = \$1.61}$$

See box C-4 for instructions on converting pounds and ounces into a decimal point measure.

$$\mathbf{1 \text{ lb } 4 \text{ oz} = (16 \text{ oz} + 4 \text{ oz}) \div 16 \text{ oz} = 20 \text{ oz} \div 16 \text{ oz} = 1.25 \text{ lbs}}$$

To calculate the TFP cost of purchasing the entire fresh fruit category in store 1 add together the purchase cost for each item:

Apples	\$1.61	(.59 x 2.750)
Bananas	\$1.62	
Grapes	\$2.98	(1.99 x 1.500)
Melons	\$0.59	(.59 x 1.000)
Oranges	\$7.12	(1.50 x 4.750)
Total fresh fruit (TFP cost): \$13.94		
(\$1.61 + \$1.62 + \$2.98 + \$0.59 + \$7.12)		

Make the same calculations for the rest of the foods on the survey, and add them to get the total cost of the TFP market basket in each store. A list of all of the food quantities used in the TFP menu is provided in box C-3.

To calculate TFP costs for processed products (e.g., a 29-ounce can of peaches), it is first necessary to divide the recorded price by the package size to get a per unit price. For example, the TFP cost of canned peaches is the recorded price of a 29-ounce can divided by the package size (29) multiplied by the number of ounces called for on the TFP food list (26).

$$\mathbf{(\$1.79 \div 29) \times 26 = \$1.60}$$

Box C-3
Thrifty Food Plan Food List

Fruits and Vegetables

Fresh

Apples	(5 small) 1 lb 4 oz
Bananas	(11 medium) 2 lb 12 oz
Grapes	1 lb 8 oz
Melon	1 lb
Oranges	(22 small) 4 lb 12 oz
Carrots	1 lb
Celery	5 oz
Green pepper	4 oz
Lettuce, leaf	9 oz
Onions	1 lb 4 oz
Potatoes	10 lb 8 oz
Tomatoes	6 oz

Canned

Oranges, mandarin	13 oz
Peaches, light syrup	1 lb 10 oz
Mushrooms	4 oz
Spaghetti sauce	26 oz
Tomato sauce	8 oz

Frozen

Orange juice, concentrate	(7) 12-oz cans
Broccoli	6 oz
French fries	11 oz
Green beans	1 lb 7 oz
Green peas	15 oz

Breads, Cereals, and Other Grain Products

Bagels, plain, enriched	(4) 8 oz
Bread crumbs	3 oz
Bread, French	4 oz
Bread, white, enriched	2 lb
Bread, whole wheat	1 lb
Hamburger buns	8
Dinner rolls	4
Corn flakes	1 oz
Toasted oats	10 oz
Flour, white	1 lb 7 oz
Macaroni	1 lb 5 oz
Noodles, yolk-free	1 lb 2 oz
Popcorn, microwave	3 oz
Rice, white	3 lb 2 oz
Spaghetti	11 oz

Milk and cheese

Evaporated milk	4 oz
Milk, 1%	9 qt
Milk, whole	4 qt
Cheese, cheddar	2 oz
Cheese, cottage	7 oz
Cheese, mozzarella	1 oz

Meat and Meat Alternates

Beef, ground, lean	3 lb 15 oz
Chicken, fryer	1 lb 13 oz
Chicken thighs	2 lb 12 oz
Fish, frozen	2 lb
Tuna fish, canned	12 oz
Pork, ground	1 lb 7 oz
Turkey, ground	1 lb
Turkey ham	11 oz
Beans, kidney	15 oz
Beans, vegetarian, baked	11 lb 9 oz
Eggs, large	17

Fats and Oils

Margarine, stick	15 oz
Shortening	4 oz
Salad dressing, mayo	6 fl oz
Vegetable oil	9 fl oz

Sugars and Sweets

Sugar, brown	1 oz
Sugar, powdered	3 oz
Sugar, granulated	9 oz
Jelly	8 oz
Molasses	1 fl oz
Pancake syrup	oz
Chocolate chips	2 oz
Fruit drink	1 gal
Fudgesicles	4

Condiments and Spices

Baking powder	.02 oz
Baking soda	.18 oz
Black pepper	.16 oz
Catsup	1.06 oz
Chicken bouillon	.71 oz
Chili powder	.79 oz
Cinnamon	.08 oz
Chocolate drink powder	1.52 oz
Cumin	.05 oz
Onion powder	.22 oz
Garlic powder	.40 oz
Gelatin, unflavored	2.25 oz
Italian herb seasoning	.03 oz
Lemon juice, bottled	.54 oz
Oregano	.18 oz
Paprika	.11 oz
Salt	.13 oz
Soy sauce	2.26 oz
Vanilla	.52 oz

Box C-4
Converting Units of Measure

It is important to note that ounces must often be expressed in terms of fractions of a pound. There are 16 ounces in a pound; therefore, each ounce can be converted into a fraction of a pound.

To convert ounces into pounds, divide by 16:

1 oz = .063 or (1/16) lb	9 oz = .563 lb
2 oz = .125 lb	10 oz = .625 lb
3 oz = .188 lb	11 oz = .688 lb
4 oz = .250 lb	12 oz = .750 lb
5 oz = .313 lb	13 oz = .813 lb
6 oz = .375 lb	14 oz = .875 lb
7 oz = .438 lb	15 oz = .938 lb
8 oz = .500 lb	16 oz = 1.00 lb

To convert quarts to gallons, divide by 4:

1 qt = .25 gal (1/4)
2 qt = .50 gal
3 qt = .75 gal
4 qt = 1.0 gal

1. How does the cost of the toolkit market basket compare with the Thrifty Food Plan reference price?

Compare the total Toolkit market basket cost with the appropriate TFP reference cost. TFP reference costs are updated monthly by USDA and are available on the Internet at <http://www.usda.gov/cnpp/using3.htm>. Choose the reference cost appropriate for the month that you collected your data. For example, if we collected our data in October 2000, we would use the TFP reference cost for that month, or \$101.50. The appropriate reference cost is based on a family of four (couple aged 20 to 50 and two children aged 6 to 8 and 9 to 11).

To calculate the percentage difference between the cost of the TFP market basket in store 1 and the TFP reference price, find the difference between the two numbers, divide by the TFP reference price, and multiply by 100:

$$(\$117.91 - \$101.50) \div \$101.50 \times 100 = 17\%$$

The cost of the TFP market basket in store 1 is 17 percent higher than the TFP reference cost, implying that the store's prices may not be affordable to low-income households.

2. How does the gap between the market basket price and the TFP allotment differs across stores?

To calculate the percentage difference in the TFP cost for the toolkit market basket in store 1 and store 2, calculate the difference between the two numbers, divide the difference by the price for store 1, and multiply by 100.

3. What is the average TFP cost for an individual food item across all stores?

To calculate the average TFP cost of an individual food item across all stores, add the TFP cost of that item for all stores and divide by the total number of stores. For example the TFP cost of apples is the following in each store:

- Store 1: \$1.29 X 1.250 = \$1.61**
- Store 2: \$0.99 X 1.250 = \$1.24**
- Store 3: \$0.99 X 1.250 = \$1.24**
- Store 4: \$0.99 X 1.250 = \$1.24**
- Store 5: \$0.89 X 1.250 = \$1.11**

To find the average cost:

$$(\$1.61 + \$1.24 + \$1.24 + \$1.24 + \$1.11) \div 5 = \$1.29$$

4. How does the average price of an individual food item differ across stores?

To determine how the TFP cost for individual food items differs across stores in your community, calculate the percentage difference between TFP cost for apples in different stores.

For example, to calculate the percentage difference in the TFP apple cost between store 1 and store 2, calculate the difference between the two numbers, divide the difference by the price for store 1, and multiply by 100:

$$\text{Store 1 (TFP cost for apples): } \$1.29 \times 1.250 = \$1.61$$

$$\text{Store 2 (TFP cost for apples): } \$0.99 \times 1.250 = \$1.24$$

$$(\$1.61 - \$1.24) \div \$1.61 \times 100 = 23\%$$

In other words, the TFP cost of apples in store 1 is 23 percent higher than the TFP cost of apples in store 2.

To calculate the difference between the TFP cost of apples in each of the five stores and the TFP cost of apples across all stores, subtract the average TFP cost from the TFP cost of apples in each store and then divide by the average price and multiply by 100. For example, when you compare the TFP cost of apples in Store 1 with the average TFP cost of apples across all five stores, you discover that the price of apples in Store 1 is 25 percent of the average TFP cost or

$$(\$1.61 - \$1.29) \div \$1.29 \times 100 = 25\%$$

The TFP cost of apples in store 1 is 25 percent higher than the average TFP cost of apples across all stores.

5. How does the average price for an entire food category differs across stores?

Use the same procedure to calculate differences in TFP costs across food categories. For example, to calculate the percentage difference in the TFP cost of fresh fruits between store 1 and store 2, calculate the difference between the two numbers, divide the difference by the cost for store 1 and multiply by 100.

6. How do I account for prices for missing items?

Because most stores will have at least one missing item, it is necessary to make some assumptions about the prices of items that are missing so that you will have a complete data set with which to calculate the cost of the market basket and make a valid comparison with the TFP allotment.

The best method is to use the average price for the item that you calculated above. For example, since the average price for apples across all stores was \$0.80, this would be a valid price to use for those stores that were missing apples.

USDA Community Food Security Assessment Toolkit

Food Store Survey Instrument

June 2002

Store Name: _____

Store Address: _____

(Street)

(City/Neighborhood)

(ZIP Code)

Store ID#: _____ Store Phone#: _____

Store Type: Supermarket Convenience Other
 Large grocery Gas/grocery
 Small grocery Ethnic/specialty

READ THE FOLLOWING TO THE STORE MANAGER BEFORE CONDUCTING THE STORE SURVEY:

Thank you for allowing me to spend some time in your store collecting information on the availability of selected food items and their prices. The information that we are collecting from a wide variety of stores in the area will help create a profile of food availability and costs in the community. The information will be only used for this purpose and data collected from all stores will be combined. No data will be linked to any specific store.

TO THE DATA COLLECTOR:

Please complete the following table by walking through the store and recording the price and weight of the least expensive item for each food listed. The table includes the unit of measure that should be selected for each food. For example, potatoes are measured in pounds, eggs are measured by the dozen. It is important that the prices recorded are for the specific food item in the table with no substitutions. If a food item is unavailable on the day that you visit the store but is usually in stock, check with the manager for the normal price. If a food is never in stock, mark the pricing box with an NA (for Not Available). If a food is on sale, place an "S" next to the price.

Food Item	Brand/ Variety	Item Weight/ Unit (Desired)	Item Weight/ Unit (Actual)	Price (Lowest Cost)
Fruit—fresh				
Apples, any variety (bagged or loose)		Per lb		
Bananas		Per lb		
Grapes (green or red)		Per lb		
Melon (cantaloupe, honeydew, or watermelon)		Per lb		
Oranges, any variety (bagged or loose)		Per lb		
Vegetables—fresh				
Carrots, unpeeled (bagged or loose)		1-lb bag		
Celery, bunch		Per lb		
Green pepper		Per lb		
Lettuce, leaf (green or red)		Per lb		
Onions, yellow (bagged or loose)		Per lb		
Tomatoes (any variety)		Per lb		
Potatoes, any variety		5-lb bag		
Fruit, canned				
Oranges, mandarin (juice or light syrup)		15-oz can		
Peaches, any variety (light syrup)		29-oz can		
Vegetables, canned				
Mushrooms, pieces		4-oz can		
Spaghetti sauce, any variety		26-oz jar		
Tomato sauce, any variety		8-oz can		
Fruits and Vegetables, frozen				
Orange juice, concentrate		12-oz can		
Broccoli, chopped		16-oz bag		
Green beans—any variety		16-oz bag		
Green peas—any variety		16-oz bag		
French fries—any variety		32-oz bag		

Food Item	Brand/ Variety	Item Weight/Unit (Desired)	Item Weight/ Unit (Actual)	Price (Lowest Cost)
Breads, Cereals, and Other Grain Products, fresh				
Bread, white, enriched		1-lb loaf		
Bread, whole wheat		24-oz loaf		
Hamburger buns, enriched		Package of 8		
Rolls, dinner, enriched		Package of 12		
French or Italian Bread, enriched		Per 1-lb loaf		
Bagels, plain, enriched		Package of 6		
Bread crumbs, plain		10-oz can		
Breads, Cereals, and Other Grain Products, dry				
Ready-to-eat cereal— corn flakes		18-oz box		
Ready-to-eat cereal— toasted oats		20-oz box		
Flour, white, all-purpose, enriched		5-lb bag		
Macaroni, elbow-style, enriched		1-lb box		
Noodles, yolk-free, enriched		1-lb bag		
Popcorn, microwave, any variety (unpopped)		9 oz package		
Rice, white, long-grain, enriched		5-lb bag		
Spaghetti, any variety, enriched		1-lb box		
Dairy Products, fresh				
Milk, 1% lowfat		1 gal		
Milk, whole		1 gal		
Cheese, cheddar, any variety		Per lb		
Cheese, cottage, any variety		16-oz carton		
Cheese, mozzarella, whole		16-oz package		
Dairy Products, canned				
Evaporated milk, any variety		12-oz can		

Food Item	Brand/ Variety	Item Weight/ Unit (Desired)	Item Weight/ Unit (Actual)	Price (Lowest Cost)
Meat and Meat Alternates, fresh				
Beef, ground, lean		Per lb		
Chicken, fryer, cut-up or whole		Per lb		
Chicken, thighs		Per lb		
Turkey, ground		Per lb		
Pork, ground		Per lb		
Turkey ham (packaged luncheon meat)		Per lb		
Eggs, grade A, large		1 doz		
Meat and Meat Alternates, frozen and canned				
Fish, flounder or cod, frozen		Per lb		
Tuna fish, chunk-style, water packed		6-oz can		
Beans, garbanzo (chick peas), canned		15-oz can		
Beans, kidney, canned		15.5-oz can		
Beans, baked, vegetarian		16-oz can		
Fats and Oils				
Margarine, stick		1-lb box		
Shortening, vegetable		3-lb can		
Salad dressing, mayonnaise-type		32-oz jar		
Vegetable oil, any type		48-oz bottle		
Sugars and Sweets				
Sugar, brown (dark or light)		1-lb bag or box		
Sugar, powdered		1-lb bag		
Sugar, white, granulated		5-lb bag		
Jelly, grape		32-oz jar		
Molasses, any type		12-oz jar		
Pancake syrup, any type		24-oz bottle		
Chocolate chips, semi-sweet		12-oz package		
Fruit drink, refrigerated, any flavor		1 gal		
Fudgesicles, ice milk		Box of 12		

Food Item	Brand/ Variety	Item Weight/ Unit (Desired)	Item Weight/ Unit (Actual)	Price (Lowest Cost)
Other Food Items, optional				
Baking powder		10-oz can		
Baking soda		16-oz box		
Chile powder		3.25-oz jar		
Cinnamon		3-oz jar		
Cumin		2-oz jar		
Onion powder		3.5-oz jar		
Garlic powder		4.25-oz jar		
Italian herb seasoning		2-oz jar		
Oregano		0.56-oz jar		
Paprika		2.9-oz jar		
Black pepper, ground		4-oz jar		
Salt, any type		26-oz carton		
Vanilla, any type		6-oz jar		
Chicken bouillon, reduced-sodium, cubes		3.75-oz jar		
Catsup, any type		28-oz bottle		
Soy sauce, reduced-sodium		10-oz bottle		
Lemon juice, bottled		32-oz bottle		
Gelatin, powdered, unflavored		Box of 4 envelopes		
Chocolate drink mix, powdered		32-oz can		