# Nutrient Analysis: Required for Nutrient-Based; Helpful for Food-Based

# CONTENTS

*A MENU PLANNER FOR HEALTHY SCHOOL MEALS...*
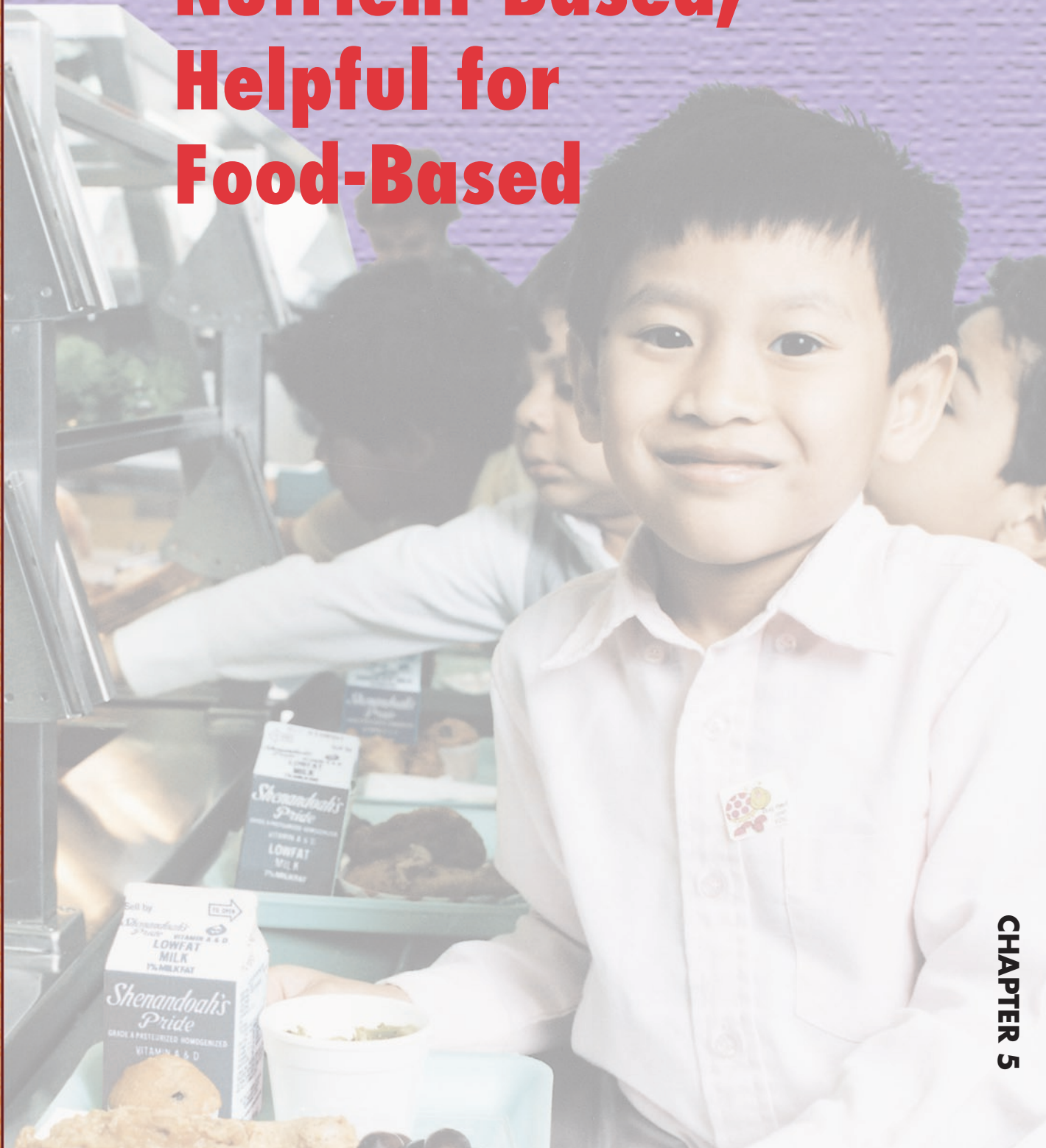
# Nutrient Analysis: Required for Nutrient-Based; Helpful for Food-Based
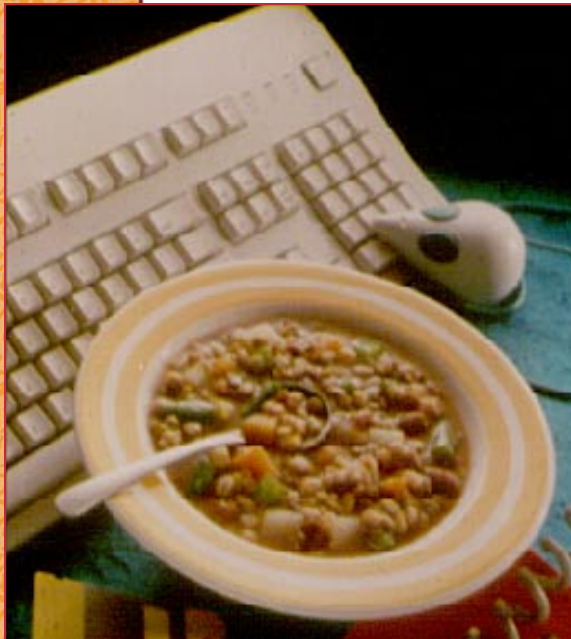
**Y**ou have a menu idea, and you're pretty sure it's a winner. You've considered the Dietary Guidelines for Americans, and you've put to good use what you know about pleasing students in your community. You *think* it will meet the nutrition goals. But how can you be sure?

This is where nutrient analysis comes in. In this chapter, we'll look at how to make computerized nutrient analysis a part of your menu planning.

In many school districts, nutrient analysis will be the responsibility of the menu planner at the central office. If you are a manager at the local school level, you will probably not need to do this yourself. However, you may have the opportunity and may find it helpful. Here are some things to keep in mind:

■ **Computerized nutrient analysis is required for NSMP and Assisted NSMP. While it's *not* required for Traditional and Enhanced Food-Based Menu Planning, it can be very helpful.**

A computerized nutrient analysis is an important step in planning meals with NSMP and Assisted NSMP. This is because meals are planned around specific nutrient goals rather than food components and meal patterns. In fact, as we've seen in earlier chapters, milk is the only required food with NSMP and Assisted NSMP.

With Food-Based Menu Planning — Traditional and Enhanced — you are *not* required to do computerized nutrient analysis. However, you may decide this is useful, especially for measuring your own progress in meeting nutrient standards. If the nutrient analysis is performed according to the *Nutrient Analysis Protocols*, you can request for your State agency to accept your nutrient analysis. Otherwise, your State agency will do a nutrient analysis during reviews.

■ **Nutrient analysis must be done using software approved by USDA. Approved software performs all of the necessary functions for an accurate analysis.**

An important part of any USDA-approved software is what is called the Child Nutrition Database (CN Database). This database is crucial to the software's capability to do the nutrient analysis as well as perform other important functions.

The CN Database includes information on reference foods commonly used in schools, USDA commodity foods, and brand-name processed foods used in schools. It also includes the nutrient analysis of *USDA Recipes for School (2006)* and links to the *Food Buying Guide for Child Nutrition Programs* information.

What about foods and recipes *not* in the CN Database? You can add these to your own local database, which you will develop by adding files available with the nutrient information into the computer software.

■ **You can get this software from a variety of sources. For a list of USDA-approved software and how to obtain it, contact your State agency or use the Internet to check the Healthy Meals Resource System Web site. (See Appendix 3 for information on this Web site.)**

To be approved, software must meet strict requirements set by USDA. One of these requirements is that the software be easy to use and come with easy-to-follow instructions. In addition, the developer of the software must have a system to update the database whenever a new release of the CN Database is available.

■ **The process for doing nutrient analysis is the same for all menu planning approaches. The only variables are who does the analysis and when.**

If you are using NSMP, you will do the analysis yourself. Complete instructions will come with any USDA-approved software you purchase.

If you choose Assisted NSMP, you will have help from an outside consultant or other agency (such as another school district or the State agency) who will do the nutrient analysis and plan menus based on local preferences. Even if you don't do the analysis yourself, you will want to understand it well enough to follow the findings of the reviewing State agency.

If you are working with Traditional or Enhanced Food-Based approaches and you choose to do the computerized nutrient analysis, simply follow the instructions contained in the software and in the *Nutrient Analysis Protocols* manual. State agency representatives will use this software to do a computerized nutrient analysis of your meals during a nutrition review or you may request the State agency to validate your accurately completed nutrient analysis.

## Making Nutrient Analysis Part of Your Menu Planning —

Nutrient analysis can go smoothly when you've considered good menu planning techniques and are using one of the USDA-approved software programs. These software programs will analyze both recipes and menus.

To picture a menu planning process that includes nutrient analysis, read through the following nine steps. Then turn to pages 146 through 152 for more details.

**1**     Plan menu on paper.

**2**     Identify food products not in the Child Nutrition Database (CN Database) or your local database. Obtain nutrition information from processor, enter into computer, and save in your local database.

**3**     Identify recipes not in the CN Database. Standardize recipes not previously standardized. Add standardized recipes to local database. Do nutrient analysis of standardized recipes.

**4**     Enter specific menu planning data. This includes: site identification, date, meal type, cycle, week, grade or age group, nutrients to be analyzed, and total number of reimbursable meals projected to be served (feeding figure).

**5**     Enter data for each menu item (each entrée, side dish, beverage, and milk) and condiment. This data includes: the food code (which identifies the food or menu item), portion size, and forecasts of projected servings.

**6**     Perform nutrient analysis of menu plan to obtain weekly averages. Check compliance with the nutrient standard.

**7**     Evaluate. Make adjustments if needed to achieve the nutrient standard.

**8**     Print menu plan reports.

**9**     If possible, provide nutrition information to students, parents, teachers.

## Making Nutrient Analysis Part of Your Menu Planning — A Closer Look at What You Will Do

**STEP** **1** **Plan menu on paper.**

You will want to plan by the week since there are weekly nutrient requirements. If you are using cycle menus (these are recommended but not required), you will also plan by cycle. (See page 92 for benefits of cycle menus.)

**STEP** **2** **Identify food products not in the Child Nutrition Database (CN Database) or your local database. Obtain nutrition information from processor, enter into computer, and save in your local database.**

Built into the software as part of the CN Database will be information on many of the foods you commonly use, both USDA commodities and purchased foods.

If the menu you are planning requires purchased products that are <u>not</u> in the CN Database, you will need to identify them at this stage.

So that you can add these foods to your local database, you will need to obtain required nutrition information from the food processor or distributor. (See Chapter 7 for a standardized form you may find helpful.)

Add this information to your local database. The next time you use these products, the necessary information will already be in your database.

**3** **Identify recipes not in the CN Database. Standardize recipes not previously standardized. Add standardized recipes to local database. Do nutrient analysis of standardized recipes.**

If you are using one of the *USDA Recipes for School (2006)* the nutrient data will be in the CN Database, already standardized and with nutrient analysis.

However, you are not limited to using USDA quantity recipes. Your USDA-approved software will allow you to add your own recipes to your local database and create new recipes, including those for theme bars and salad bars.

You will do this by following the software directions. You will need to standardize first, then let the computer do the nutrient analysis. (See Chapter 7 for information on how to standardize a recipe.)

You will need to create a new recipe if you plan to make ANY changes in a USDA quantity recipe. This includes, for example, changing ingredients or preparation procedures, or using alternate and optional ingredients. You will also need to create a new recipe for alternate ingredients and variations of USDA school recipes. Check the software to find out which variations are included in the CN database.

For example, USDA Recipe D-12, Beef or Pork Burrito, has an alternate ingredient for Pork Burrito. Nutrient analysis for the first ingrdient in the recipe, Beef Burrito, is part of the CN Database. But you will need to create a *new* recipe for Pork Burrito, analyze the nutrient content, and add it to the local database. Similarly if you add raisins to C-05, Carrot Cake, a new recipe would need to be created to include the additonal raisins.

See page 148 for more details on creating a new recipe. See page 155 for how you will treat theme bars and salad bars as recipes.

# Ten Steps for Creating a New Recipe

**Your USDA-approved software will have the capabilities to add a recipe to the local database. You will follow the software directions. Regardless of which software you've selected, all of the following steps are needed to add a recipe to the local database.**

1.  Enter recipe category, code number, and name.

2.  Enter recipe yield or number of servings (for example, "100 servings").

3.  Enter type of serving (for example, "cups").

4.  Enter serving size or description (for example, "4-oz. ladle" or "#16 scoop").

5.  Look at the food ingredients listed in the database. Then select the correct food item and amount that corresponds with the food ingredient in the recipe.

6.  Enter recipe ingredients and amounts using Yield Factor Method.

    The Yield Factor Method requires:  (1) each recipe ingredient be entered as "ready to serve" or "cooked"; and (2) the amount of each ingredient be calculated as a yield from the "as purchased" or raw weight, using USDA's Food Buying Guide. For example:  1 lb. dry macaroni "as purchased" = 9.75 cups cooked; 1 lb. raw ground beef "as purchased" = .75 lb. cooked.

7.  Enter preparation directions, if desired.

8.  Save the recipe to the local database recipe file.

9.  Complete a nutrient analysis.

    The software will calculate the following for each recipe:

    - calories
    - protein
    - total fat
    - saturated fat
    - vitamin A
    - vitamin C

    - calcium
    - iron
    - carbohydrate
    - cholesterol
    - sodium
    - dietary fiber

    - percentage of calories:
      – from carbohydrate
      – from protein
      – from fat
      – from saturated fat

10. Print the recipe, preparation instructions, and nutrient analysis. Review the printout against your recipe to ensure no errors were made in data entry.

**STEP**

**4** Enter specific menu planning data. This includes: site identification, date, meal type, cycle, week, grade or age group, nutrients to be analyzed, and total number of reimbursable meals projected to be served (feeding figure).

**Site identification:** This refers to the school or schools for which the menu is being planned. It may be a single school or a group of schools with the same menu. For example: "Lincoln Elementary School" or "XYZ Unified School District Elementary Schools."

**Date:** This is the date the menu will be served. It identifies the menu for future reference.

**Meal type:** Specify lunch or breakfast. There are specific program requirements for each. (You may also see the words "menu type" used along with or in place of "meal type" here.)

**Cycle:** A cycle is a series of menus that repeats. A cycle may cover 1 to 8 or more weeks, depending on what works for the individual school or groups of schools. Cycles may be planned for a season or for a year. For example: "Fall Cycle, Number 2, Weeks 1-4"; or "Elementary Cycle, Weeks 1-5."

**Week:** A school week for nutrient analysis purposes is 3 to 7 consecutive days. If there are fewer than 3 consecutive days in a week, the days in that week are combined with the coming or the prior week for analysis. Most menus will be averaged over a 5-day week.

**Grade or age group:** You will enter the age or grade group that is appropriate for the children you will be serving with this menu. For example, if you were planning lunch for Lincoln Elementary using established grade groups with NSMP, you might enter "K-6."

It's important to select the *correct* age/grade group for your school or schools. The age/grade group is key to identifying which nutrient standard will be used as a yardstick for measuring success.

As we've seen in earlier chapters, there are different established and optional age/grade groups for the various menu planning approaches. (See Chapter 2 for Traditional and Enhanced Food-Based Menu Planning, and Chapter 3 for NSMP and Assisted NSMP.)

In addition, with NSMP and Assisted NSMP you can develop new, customized age groups. When a grade or age group is added, USDA-approved software will automatically adjust the nutrient standard to fit the selected group.

**Nutrients to be analyzed:** Your software may offer nutrient analysis of some nutrients and dietary components that are not required. The following *are* required:

- calories
- protein
- total fat
- saturated fat
- vitamin A
- vitamin C

- calcium
- iron
- cholesterol
- sodium
- dietary fiber

**Feeding figure:** This is the total number of reimbursable meals projected to be served. For example: "500 Breakfasts" or "1,000 Lunches."

Remember: *Only* reimbursable meals are to be included for nutrient analysis. Therefore, projected servings and total feeding figures must *not* include á la carte or adult sales.

**STEP 5** Enter data for each menu item (each entrée, side dish, beverage, and milk) and condiment. This data includes: the food code (which identifies the food or menu item), portion size, and forecasts of projected servings.

**Food code:** The food code is the numbers or letters assigned to each food and menu item in the CN Database or local database. For example: "1082" for 1% low-fat milk; "8020" for corn flakes cereal. You will find the food code in the computer's ingredient file.

Many software systems will also allow the menu planner to enter the name of the food or menu item. Using this name, the software will search for similar foods and allow the menu planner to select the correct item.

**Portion size:** You will need to specify the portion size for every food item and menu item. The portion size you enter must relate to the portion sizes available for the food or menu item in the nutrient analysis software system. For example:

- 1% low-fat milk, 8 fl. oz. or 1 cup
- corn flakes cereal, 1 oz. (weight) or 3/4 cup

**Forecasts of projected servings:** For each menu item, you will want to determine the number of servings you expect to produce. This information should be available from historical menu production records, but you can also use other methods to arrive at this figure.

How you will use this information to enter data into your computer will depend on whether you are doing an unweighted (simple) or a weighted analysis. (See page 154. Also see italicized note at bottom of page 152.)

**STEP** **6** Perform nutrient analysis of menu plan to obtain weekly averages. Check compliance with the nutrient standard.

To do this, you will need to specify the site number, date range, and meal type as follows:

**Site number:** This refers to the school or group of schools for which the menu is being planned and analyzed. Specify the site number you assigned in Step 4 above (or during an earlier menu planning session).

**Date range:** Specify the first day of the menu analysis week and the last day. For example: "4/14/08 - 4/18/08."

**Meal type:** Specify breakfast or lunch. To meet the nutrient standards, a breakfast needs to provide 1/4 of the Recommended Dietary Allowance (RDA) for required nutrients and calories; a lunch needs to provide 1/3 of the RDA for required nutrients and calories.

**STEP** **7** Evaluate. Make adjustments if needed to achieve the nutrient standard.

If the nutrient standard is not met when the menu is analyzed and averaged over a week, make changes. For example, to help meet the nutrient goal:

- Replace a food on the menu plan.
- Change portion sizes.
- Add a food to the menu plan.
- Modify a recipe, a preparation technique, or both.
- Purchase a different version of the product you originally planned to use — for example, buy a pizza that is lower in fat.

**STEP** **8** **Print menu plan reports.**

You will be printing several reports:

- Nutrient analysis
- Menu
- Nutritional composition of menu items
- Menu production records that can be saved and/or used in production.

The nutrient analysis report will include both of the following: (1) nutrient analysis for each meal with comparison to the nutrient standard for the age/grade group you have selected; and (2) the weekly average compared to the nutrient standard for this selected group.

**STEP** **9** **If possible, provide nutrition information to students, parents, teachers.**

You are encouraged to make the nutrient content of meals available for your customers. Choose the best method for your school — printing information on a menu, for example, or in a brochure. See Chapter 8 for additional ideas. If you have many menu choices, you may want to select a few possible combinations to provide to students and parents.

*If you would like more detailed information on doing a computerized nutrient analysis, you may want to obtain a copy of  Nutrient Analysis Protocols: How to analyze menus for USDA's School Meals Programs, listed in Appendix 3.*

# Your Nutrient Analysis Won't Be Right If You Use Incorrect Data

**Entering the correct data for recipes and menus is important to the success of nutrient analysis. If the wrong foods, the wrong portion sizes, or the wrong recipes are entered, the analysis will not reflect what is planned and offered.**



Some common data entry errors include...

■ Selecting an incorrect food item from the database.

■ Using the incorrect form of a food. For example, entering the food as raw when the item will be served cooked.

■ Selecting incorrect portion sizes.

■ Not entering condiments, salad dressings, and added fat.

■ Not using standardized recipes.

■ Leaving ingredients out of a recipe.

■ Leaving menu items out of nutrient analysis. For example, omitting a bun for the hamburger.

■ Including ála carte and adult meals in the nutrient analysis for reimbursable meals.

# What's the Difference Between an Unweighted (Simple) and a Weighted Nutrient Analysis?

As the first chart below shows, an unweighted (simple) analysis is based on a simple average of a menu. It gives the nutrient contribution of each menu item equal importance.

As the second chart below shows, a weighted nutrient analysis gives more weight to choices that students are more likely to select, based on the menu planner's records of what his or her customers have chosen on previous occasions.

## UNWEIGHTED (SIMPLE) NUTRIENT ANALYSIS

| Item | Number of Servings Planned | Number of Servings for Computation | COMPUTATION | Nutrient Contribution |
|------|------|------|------|------|
| Pizza | 200 | 100 | 100 divided by 300  =  33.3% | |
| Baked Chicken | 50 | 100 | 100 divided by 300  =  33.3% | |
| Chef's Salad | 50 | 100 | 100 divided by 300  =  33.3% | |
| **Total:** | **300** | **300** | | **100 %** |

## WEIGHTED NUTRIENT ANALYSIS

| Item | Number of Servings Planned | Number of Servings for Computation | COMPUTATION | Nutrient Contribution |
|------|------|------|------|------|
| Pizza | 200 | 200 | 200 divided by 300  =  66.6% | |
| Baked Chicken | 50 | 50 | 50 divided by 300  =  16.7% | |
| Chef's Salad | 50 | 50 | 50 divided by 300  =  16.7% | |
| **Total:** | **300** | **300** | | **100 %** |

## If You Serve Both Breakfast and Lunch, Can You Do a Combined Nutrient Analysis?

Yes. Some USDA-approved software is capable of calculating a combined nutrient analysis for breakfast and lunch. This is an option you can select from the list of functions that will appear on your computer screen. This function should only be used with a weighted nutrient analysis for Nutrient-based menu planning.

To tell your computer to do this, follow the directions in the software. If you have completed all of the steps in "Making Nutrient Analysis Part of Your Menu Planning" (pages 146 to 152), you will have entered the necessary data.

## How Will You Do Nutrient Analysis for a Theme Bar?

To do a nutrient analysis for a theme bar, you will essentially treat it as a recipe. You will begin by giving it a name (for example, "Potato Theme Bar") and will continue through the various steps for creating and saving a new recipe described on page 148.

As you go through these steps, you will enter such information as: recipe yield (number of servings), serving size, ingredients and amounts, and preparation directions. You will then save the recipe to the local database recipe file and complete the nutrient analysis.

You will need to do this for *each* of your theme bars, including salad bars. If you change the ingredients for a theme bar, you must develop a new recipe.

Theme bar recipes are treated the same as any other menu choice. In other words, they are averaged into the weekly nutrient analysis based on projected servings.

# How Does Making Substitutions Affect Requirements for Nutrient Analysis?

Occasionally, you may need to make substitutions in menus you have planned. Perhaps a vendor has delivered the wrong food, or maybe the food you ordered isn't available.

No matter what the reason, remember:  Substitutions *change* the nutrient content, and meals may or may not continue to meet the nutrient standard. This is also important to think about when you find yourself using leftovers.

How does making substitutions or using leftovers affect nutrient analysis?  The answer depends largely on timing — how far in advance you know you will be making changes.

For example, when substitutions are needed because of an emergency, it may be impractical to revise menus and redo the analysis, especially if the emergency arises at the end of the week. However, if you know 2 weeks or more in advance, you will have time to do this.

■ **When making substitutions, think in terms of a 2-week window:**

**If you know 2 weeks or more in advance:**  You must re-analyze the menu and meet the nutrient standard, incorporating the substituted item or items.

**If you know less than 2 weeks in advance:**  No re-analysis is required. However, in selecting a food to use in making the substitution, try to choose a food that will contribute similar nutrients to the meal.

■ **When making substitutions on a theme bar, the same rules apply.**

**If you know 2 weeks or more in advance:**  You must re-analyze the menu and meet the nutrient standard, incorporating the substituted food. In addition, if you plan to make *several* substitutions 2 or more weeks in advance, you should make a new theme bar recipe.

**If you know less than 2 weeks in advance:**  No re-analysis is required. However, in making the substitution, choose a food that will contribute similar nutrients to the meal.

■ **Also use this 2-week window as a guide when you are considering incorporating leftovers into a menu:**

> **If you know 2 weeks or more in advance:** You must re-analyze the menu and meet the nutrient standard, incorporating the leftover food.

> **If you know less than 2 weeks in advance:** No re-analysis is required. However, be careful to use the leftover food in place of a food that would have contributed similar nutrients to the meal.

In addition, be sure to document substitutions and leftovers. A good way to do this is making notes on the menu production record. (See Chapter 7 for more information on recordkeeping.)

# How Will You Do Nutrient Analysis for Field Trip Meals?

Mr. Brown's sixth graders are going on a field trip, and you have been asked to provide lunch for the entire class. How will you do the nutrient analysis for these meals?

You will want to keep in mind the following:

(1) Menus for field trips should be part of the menu analysis *on the day they are served*. They should be included as a separate menu choice along with the regularly scheduled menu items.

(2) The 2-week window applies. If you know you will be providing field trip meals 2 or more weeks in advance, you must include them in the nutrient analysis for that day. If you know less than 2 weeks in advance, you are not required to re-analyze the day's menu to include the field trip meals.

(3) The projected number of servings is the number of students getting the field trip meals — in this case, in Mr. Brown's class.

(4) For calculating the total number of reimbursable meals projected to be served (feeding figure), reimbursable field trip meals count the same as reimbursable meals served on a school campus.

Tip: Create field trip menus that meet the nutrient standard for the age/grade group served so that when combined with the school-based menu, they will have little effect on the total nutrient analysis.