

# Financial Management for Managers

**2<sup>nd</sup> Edition**

**Participant's Workbook**

**Inventory**

**Labor Costs**

**Production  
Records**

**Meal  
Equivalents**

**Menu Item  
Costs**

**Product  
Screening**

**Forecasting**





# Financial Management for Managers

## Participant's Workbook

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### Institute of Child Nutrition

The University of Mississippi, School of Applied Sciences  
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**PURPOSE**

The purpose of the Institute of Child Nutrition is to improve the operation of Child Nutrition Programs through research, education and training, and information dissemination.

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**MISSION**

The mission of the Institute of Child Nutrition is to provide information and services that promote the continuous improvement of Child Nutrition Programs.

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**VISION**

The vision of the Institute of Child Nutrition is to be the leader in providing education, research, and resources to promote excellence in Child Nutrition Programs.

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# Table of Contents

<b>Introduction</b>	Intro—1
<b>Lesson 1: Financial Management</b>	Lesson 1—1
<b>Lesson 2: Production Records</b>	Lesson 2—1
<b>Lesson 3: Forecasting</b>	Lesson 3—1
<b>Lesson 4: Menu Item Costs</b>	Lesson 4—1
<b>Lesson 5: Product Screening</b>	Lesson 5—1
<b>Lesson 6: Inventory Control</b>	Lesson 6—1
<b>Lesson 7: Meal Equivalents</b>	Lesson 7—1
<b>Lesson 8: Labor Costs</b>	Lesson 8—1
<b>References</b>	Reference—1
<b>Appendix</b>	Appendix—1





## Introduction

### **Financial Management: A Course for School Nutrition Managers**

This course is designed for site-based managers. Controlling costs during food production is a critical part of financial management. Efficient scheduling of personnel and equipment, in addition to forecasting the right amount of food to produce at a designated time, will result in greater financial control.

### **Training**

The purpose of this training is to identify resources for an effective financial management system in the School Nutrition Program (SNP). The intended audiences for this training are school nutrition site-based managers and supervisors. While we cannot teach new managers and supervisors everything they need to know about financial management, we can introduce the importance of sound financial management practices.

To help guide you through this training, the Institute of Child Nutrition has provided each of you with a Participant's Workbook. The workbook contains important information and activities developed specifically for this training. On the upper right corner of the slides, you will see a reference to the corresponding lesson in the Participant's Workbook.

**Training Overview**

This training will discuss the following topics:

- Financial Management
- Production Records
- Forecasting
- Menu Item Costs
- Product Screening
- Inventory Control
- Meal Equivalents
- Labor Costs

Each topic will include a number of sub-topics, many of which will include a number of activities to reinforce the concept.

This training will cover a variety of topics, and questions are highly encouraged. Because all of your questions are important, please write them on a self-adhesive note and post it to the Bike Rack. Sometimes questions may require research or a longer answer than time allows at that point.

**Comfort Level**

During this training, we encourage you to determine your level of participation based on your individual needs.

**Pre-Assessment**

A pre-assessment is a training tool that provides the participants' baseline knowledge of the training topic.

**(Activity): Pre-Assessment**

Place a unique identifier on the top right corner of the pre-assessment. The same identifier will be used at the conclusion of the training on the post-assessment. It is not necessary for you to write your name on the pre-/post-assessments.

**Icebreaker**

We are going to do a quick icebreaker activity. On an index card, write your name and where you work. On the other side of the card, write what you believe is the greatest training need when understanding financial management principles. We will collect the cards and randomly distribute them.

**(Activity): Icebreaker**

Locate the individual whose name appears on the card. Introduce yourself, and briefly discuss what you would like to learn from this training. At the end of the activity, you will introduce each other to the rest of the group and state what each of you would like to learn from this training.

**USDA Professional Standards and Learning Objectives**

A key provision of the Healthy, Hunger-Free Kids Act of 2010 (HHFKA) includes professional standards for school nutrition professionals. The rule requires a minimum amount of annual training hours for all state directors of school nutrition programs, state directors of distributing agencies, school nutrition program directors, managers, and staff. Required training topic areas will vary according to position and job requirements. There are also minimum hiring standards for new state directors of school nutrition programs, state directors of distributing agencies that oversee USDA Foods, and school nutrition program directors. The USDA Professional Standards and Learning Objectives serve as a foundation for this training

**(Workbook Handout): USDA Professional Standards and Learning Objectives**

Take a few minutes to review the following **USDA Professional Standards and Learning Objectives** handout for this training.



# USDA Professional Standards and Learning Objectives

## USDA Professional Standards

### Key Area

#### Administration – 3300

### USDA Professional Standard – Financial Management

#### 3300 – Financial Management

### Learning Objectives

Using the information provided in this training, participants will:

- Identify key elements of financial management.
- Identify the required elements of a production record.
- Recognize key information when forecasting usage of menu items.
- Calculate the cost of a menu item.
- Create a sample product screening evaluation tool.
- Identify inventory controls that contribute to a financially sound school nutrition program.
- Calculate the meal equivalents for different scenarios.
- Calculate labor costs.



**Terms and Definitions**

Terms and definitions are included in the discussion of this training. Some of the terms and definitions listed may not be included in the training but may serve as a reference at another time.

**(Workbook Handout): Terms and Definitions**

Review the following **Terms and Definitions** handout.





## Terms and Definitions

### **Batch Cooking**

Batch cooking, or just-in-time preparation, is cooking frequently and in small quantities to maintain high quality throughout the serving period.

### **Budget**

A budget is a business entity's financial management plan for a specified future period of time, generally a fiscal year. The budget systematically considers the entity's planned activities and objectives for that period, forecasts the costs the entity must incur in carrying out those activities, and identifies the revenues projected to cover those costs. Formulating and executing a budget enables a School Nutrition Program (SNP) to achieve its objectives of providing quality meals while living within its means.

### **First-In, First-Out (FIFO)**

First-in, first-out (FIFO) is the process of rotating the older product to the front and the newer items to the back of the shelf. The age of the item is based on the manufacturer's pack date and not the date on the receipt.

### **Food Cost**

Food cost is the cost of food used in school nutrition service to prepare meals and other food items such as a la carte. One calculates the monthly cost of food used by subtracting the food inventory on hand at the end of the month from the sum of the beginning food inventory and food purchases during the month.

## Terms and Definitions, continued

### Forecasting

Forecasting is the process of analyzing current and historical data to determine future trends. In the case of school nutrition programs (SNPs), forecasting involves predicting and estimating the goods, works, and services needed in specified areas for the coming year, and/or assessing needs by reviewing current procurement activities. Forecasting allows procurement plans to evolve each fiscal year.

### FTE

Full-Time Equivalent (FTE) is a measure used to translate the number of hours worked into full-time equivalents hours. Generally, an FTE of 1.0 is equivalent to one full-time employee.

### Indirect Expenses

Indirect expenses are overhead costs that cannot be directly related to a business entity's principal activities without exerting effort disproportional to the results achieved. In a school district, indirect costs may include the costs of the Superintendent's office, human resources, payroll, accounting, budgeting, purchasing, utilities (light, heat, etc.), building maintenance and repair, auditing, etc. Such costs benefit all activities of the school district, and the portion that benefits any specific activity, such as food service, is generally determined through a mathematical allocation process.

### Institute of Child Nutrition (ICN)

Formerly the National Food Service Management Institute, the Institute of Child Nutrition (ICN) is located at The University of Mississippi, Oxford campus. The mission of ICN is to provide information and services that promote the continuous improvement of child nutrition programs.

## Terms and Definitions, continued

### **Meal Equivalents (ME)**

A meal equivalent is a statistical tool used in the school nutrition program to understand food production costs and productivity based on a per unit expense. It is calculated by converting differing types of meals (breakfasts, lunches, and snacks) and nonprogram revenue to a standard reimbursable student lunch. Please note the Food and Nutrition Service (FNS); Department of Agriculture (USDA) does not prescribe one particular method in order to calculate meal equivalency. Meal equivalencies are often used in contracted school nutrition operations to determine the number of meals for which the school nutrition management company (FSMC) will be paid. Also, a la carte and other sales are typically converted into lunch/meal equivalents by assigning a dollar value to a reimbursable lunch (lunch/meal equivalent rate) and dividing the sales revenue by this dollar value factor (lunch/meal equivalent rate). However, the most accurate method for developing a lunch/meal equivalent rate is based on the full cost of producing a reimbursable lunch. The lunch/meal equivalent rate must be set no lower than the free lunch reimbursement rate plus the value of USDA foods.

### **Meals Per Labor Hour (MPLH)**

Meals per labor hour is the most common measure of productivity in school nutrition, calculated by dividing the number of meal equivalents produced and served in a day by the number of labor hours.

### **Meal Reimbursement**

Meal reimbursement is a federal cash payment received from the State agency for meals that meet federal standards and are served to school children.

### **Par Stock**

Par stock is a predetermined inventory quantity for a particular item and serves as an indicator of when to reorder the product.

## Terms and Definitions, continued

### **School Nutrition Programs (SNPs)**

School nutrition programs (SNPs) are federally funded programs and include School Breakfast Program (SBP), National School Lunch Program (NSLP), After School Snack Program (ASSP), Fresh Fruit and Vegetable Program (FFVP), Special Milk Program, Seamless Summer Option (SSO), and Summer Food Service Program (SFSP).

### **Specification**

A specification is a concise statement of a set of requirements to be satisfied by a product, material, or process.

### **Standardized Recipe**

A standardized recipe is a recipe that has been tried, adapted, and retried several times for use by a given school nutrition operation. The tested recipe produces the same good results and yield every time when using the exact procedures the same type of equipment and the same quantity and quality of ingredients.

### **Stock Keeping Unit (SKU)/Product code**

A stock keeping unit (SKU) or product code is a unique identifier for each unit of product. The SKU is usually the product code.

### **United States Department of Agriculture (USDA)**

The USDA is the federal department responsible for administration of the nation's child nutrition and USDA Foods distribution programs. The Food Distribution Division of USDA's Food and Nutrition Service (FNS) is responsible for coordinating the distribution of USDA Foods to State agencies that oversee the SNP in their states.

## Terms and Definitions, continued

### USDA Foods

USDA Foods are available to any school that participates in a USDA school nutrition program. USDA Foods account for 15% to 20% of the foods in SNPs and are 100% American grown.

### Yield Factors (AP and EP)

Yield factors can vary depending on factors such as product quality, preparation techniques, and cooking times and temperatures. When verifying a recipe, the AP (as purchased) quantity needed to yield the necessary EP (edible portion) quantity of an ingredient must be determined. The *Food Buying Guide for Child Nutrition Programs* contains ingredient yield information.

### Importance of Financial Management

School nutrition programs (SNPs) are federally assisted meal programs operating in public and nonprofit private schools. The Food and Nutrition Service (FNS), United States Department of Agriculture (USDA) administers the school meals programs at the Federal level. At the state level, programs are usually administered by state agencies, which operate the program through agreements with school food authorities (SFA). The SNP regulations are constantly changing. Increasing program costs and growing operating demands are a reality in today's world. Greater control and more informed decisions are possible when all costs of the program are understood.

**What financial management tools or processes contribute to a financially sound school nutrition program?**



## Lesson 1: Financial Management

**Objective:** Identify key elements of financial management.

### **Budget Manager's Role**

The school nutrition budget includes input from the school nutrition management staff.

- The school nutrition management staff is involved in the budget preparation and review process.
- A copy of the budget is on file at the school site.
- School level income and expenditure projections are evaluated regularly, and the budget is amended as needed to accommodate increases or decreases in participation, costs, etc.

### **Financial Management Practices**

Financial management practices are reviewed on a continuing basis:

- Meals per labor hour or other established indicators of productivity are analyzed regularly.
- Meal and a la carte prices are determined based on program relations including paid lunch equity and established criteria that recover costs and promote affordable, healthy choices.
- Financial records are submitted regularly to district administration and are cross-referenced against program records.
- A profit and loss statement categorizes income and expense data by district and school sites, and is used to compare expenditures to revenues.
- The average percent of participation is analyzed regularly (not less frequently than monthly) and are based on program relations including paid lunch equity.

**Expenditures**

The cost of producing a meal is a critical piece of information for the school nutrition manager. In school nutrition operations, the production of meals is the unit of measurement used to gauge effectiveness and efficiency. Some other allowable school nutrition expenses include:

- food costs (e.g., purchased foods and value of USDA Foods);
- labor costs (e.g., salaries, wages, and employee benefits);
- supply costs (e.g., general operating costs, food production supplies, expendable equipment);
- purchased services (e.g., data processing);
- transportation (e.g., fuel and oil) and;
- indirect costs (e.g., repairs, professional development, maintenance, electricity, fuel, water overhead, and other appropriate costs as defined by state guidelines).

**Internal Controls**

Internal controls increase financial accountability and provide benchmarks to objectively measure progress toward achieving program goals:

- Written policies and procedures for handling cash and credit are well defined and properly implemented.
- Authorized individuals should handle cash, monitor accounting, and oversee control procedures.
- Cash handling procedures are limited to authorized personnel and are monitored by independent review.
- Employees are trained to report discrepancies or suspicious activity. (e.g., forecasting, monitoring meals, food and labor costs, labor hours).



**Financial Management Skills**

In order to make financial management decisions, SNP directors must have competencies, knowledge, and skills of basic financial management principles. In the next activity, you are going to have the opportunity to assess your financial management skills.

**(Workbook Activity): Self-Assessment**

Take a few moments and complete the Self-Assessment. Share the financial management skills that you will incorporate into your operations.



## Self-Assessment

**Directions:** Evaluate your current skill level for each item listed. You will notice there is a place to indicate whether your skills are good, okay, or could be better for each item.

Skills	Good	Okay	Could be Better
Knows importance of operating a cost-effective program.			
Knows relationship of program cost and program revenue.			
Knows methods and purposes of calculating program costs, such as food, supplies, labor, operating, and special events.			
Knows standard security practices and importance of protecting the financial integrity of the program.			
Knows financial goals and objectives of the school district's Board of Education.			
Knows the purpose and components of the school's budget and the importance of operating within district guidelines.			
Knows the elements of budget management justification according to district guidelines.			
Implements methods for increasing productivity and decreasing waste.			
Implements a system of checks and balances to ensure accuracy and to prevent fraud.			
Implements security measures at all times when handling cash or meal benefit identifiers.			

## Self-Assessment, continued

<b>Skills</b>	<b>Good</b>	<b>Okay</b>	<b>Could Be Better</b>
Ensures that all accounting procedures are documented and comply with federal, state, and local regulations and policies.			
Ensures that all personnel responsible for meal count and cash collection operations are properly trained and authorized.			
Adjusts expenditures in relation to income.			
Identifies factors that influence variable costs and practices effective measures for cost containment.			
Identifies and calculates the production and operation portion of the meal cost.			
Provides accurate information for establishing a pricing structure in all meal categories and a la carte items that follow federal, state, and local guidelines.			
Pre-costs menus and a la carte items.			
Uses a team approach to encourage staff members to incorporate sound financial management practices as a part of their responsibility.			
Participates in the budget process by providing information for forecasting participation, labor and equipment needs, and other costs such as repair jobs.			
Maintains effective labor cost controls through training and employee development according to district standards.			
Implements effective cost controls using established financial standards for all phases of the SNP.			

**Menus**

The menu is the driving force that begins the procurement process. The menu must meet all federal guidelines and be appealing to the customer. A well-planned menu includes:

- all meal pattern components and subgroups;
- whole grain-rich foods;
- fruits and vegetables;
- a variety of shapes, textures, colors, and temperatures; and
- a blend of flavors.

Other factors to consider in menu planning include equipment, food cost, cultural food preferences, labor costs, skill levels, environmental friendliness, and the availability of USDA Foods.

**How far in advance do you plan your menus?**

**What are the benefits of planning menus well in advance?**

**Stock Keeping Units (SKUs)/ Product Codes**

Good menu planning also includes optimizing stock keeping units (SKUs). A SKU is a unique identifier for each unit of product and is often the product code. Identifying multiple uses for an inventory item is cost efficient for both the district and the vendor. Think of all the menu items you can create with diced chicken, brown rice, or chopped fresh onions.

In many cases, school districts burden themselves with too many different products or SKUs. For instance, each flavor of juice has a separate SKU with its own product code number.

**What are some benefits of reducing SKUs or the number of products that are in your inventory?**

### **Reducing SKUs**

Reducing the number of SKUs is a best practice. A few ways to reduce SKUs include

- using the same product for more than one menu item, such as one type of chicken patty for chicken on a bun, chicken parmesan, and grilled chicken salad; and
- accepting only substitutions that have been approved by the school nutrition director or central office person responsible for purchasing.

### **Recipes**

Standardized recipes are required in school nutrition programs and identify the specific quantity for each ingredient, the number of servings, and the portion size for the recipe. A standardized recipe is a recipe that has been tried, adapted, and retried several times for use by a given school nutrition operation. The tested recipe produces the same good results and yield every time when using the exact procedures, the same type of equipment, and the same quantity and quality of ingredients.

In the next activity, we identify the benefits of utilizing standardized recipes.

#### **(Workbook Activity): Standardized Recipes**

List the benefits of utilizing Standardized Recipes

**USDA Foods**

In addition to the purchased food, schools obtain additional food through the USDA Foods Program. The USDA Foods Program helps schools stretch tight budgets and helps connect the people who grow good food with those who need it. The USDA Foods Program provides about 15–20% of all food served by schools. It is important to include the value of the USDA Foods when determining the cost of foods used.

USDA Foods keep pace with current nutrition standards in the meal pattern and coincide with the principles established in the *Dietary Guidelines for Americans*. USDA offers frozen, fresh, and refrigerated products, more package sizes, and more varieties of healthy new options. It is critically important to determine during the planning stage how and when USDA Foods will be incorporated into the menu.





## Lesson 2: Production Records

**Objective:** Identify the required elements of a production record.

### **Food Production Records**

Food production and menu records are a requirement of SNPs, and must be maintained to demonstrate the required food components and food or menu items offered on a given day. Production records are necessary to support the claim for reimbursable meals. In addition, these records

- must demonstrate that reimbursable school meals comply with program requirements;
- must be available for state or federal review; and
- must be available for three years plus the current year or in accordance to state and local policies.
- must include enough information to evaluate how menu items contributed to meeting nutrition standards and whether the menu offered appropriate levels of nutrients and calories.

### **Production Record Value**

Production estimates must be completed in advance so scheduling of personnel and purchasing can be more accurate. Production records are typically used to complete forecasting. The well-developed food production record is a valuable kitchen tool for forecasting future food preparations when the same or a similar menu is planned. Production records assist in

- adjusting menu choices,
- removing unpopular menu items, or
- increasing or decreasing the quantity of a menu item to be produced.

**Production Record Required Elements****Production records include**

- date, menu type, meal service
- menu items
- recipes and/or products code numbers
- grade group for students served
- If meal service is Offer Versus Serve (OVS)
- planned number of servings
- portion or serving sizes for each grade group and adults
- planned quantity of food to be prepared
- vegetable subgroups
- total amount of food prepared
- amount of food used
- condiments
- actual number of meals served
- substitutions and leftovers
- total reimbursable meals served

**(Workbook Handout): Required Elements of a Food Production Record**

Review the **Required Elements of a Food Production Record** handout

**(Workbook Activity): Lunch Production Record Worksheet**

Determine if all the elements of the production record are included on the production record.

If not, identify the missing information.

## Required Elements of a Food Production Record

Accurate, complete production records are required in the school nutrition program. The elements identified in the chart are included for each reimbursable meal. Additional elements such as vegetable subgroup and food temperatures may be included on the production record.	
Elements	Description
Date, menu type, meal service	A production record includes the site and meal date, the menu type, and the meal service such as breakfast
Menu items	All planned items, including all choices, types of milk, dessert, and substitutions: all condiments served as part of the reimbursable meal, including gravy, butter, margarine, mayonnaise, relish, ketchup, mustard, and salad dressing
Recipes and/or products code numbers	Specific recipes and food products; name of food and form; recipe number if USDA; if processed, brand name and code number
Grade group for students served	Identifies the grade group being served. Adjusted portion sizes for age or grade groups specified must be shown for menu item, recipes, and products
Offer Versus Serve (OVS)	Identify if the meal service is Offer Versus Serve (OVS)
Planned number of servings	Forecasted or predicted approximate number of servings needed for each menu item; projected number of portions and serving sizes for each menu item for a la carte sales; projected number of student servings for each menu item; projected number of total servings
Portions or serving sizes for each grade group or adults.	Portion size served must be the same as planned: if portion size is adjusted for age, a separate line should be used
Vegetable sub groups	Vegetable identified by vegetable subgroup and quantity for meal pattern contribution
Total amount of food prepared	Total amount of food prepared (e.g., the number of servings, and cans)
Amount of food used	Verifies the planned menu was actually prepared and served
Condiments	Identify condiments and the serving size
Actual number of meal served	Actual number of reimbursable meals served (indicate this information for <u>each</u> age/grade group); actual number of nonreimbursable meals served (i.e., to adults or as á la carte sales)
Substitutions and Leftovers	A record of leftovers and how the leftovers will be used; substitutions are noted
Total Reimbursable meals served	Identify the total number of reimbursable meals served.



## Lunch Production Record Worksheet

**Directions:** Review the menu. Determine if all the elements of the production record are included on the production record. If not, identify the missing information.

**Menu:** Chicken & Cheese Fajita with Roasted Peppers and Onions, (1 oz eq chicken + ½ oz eq cheese ¼ cup veg) Pinto beans, (¼ cup) Whole Wheat Roll, (1 oz eq) Chilled Pineapple, (½ cup) Variety of Milk (1 cup)

School/Site Name: Eagles Nest Elementary  
 Grade Group:  
 Planned # Students to be served: 120  
 Planned # Adults to be served: 15

Date: Monday, October 7, 20xx  
 Offer vs. Serve: Yes No  
 Actual # Students Served: 118  
 Actual # Adults Served:

Component/Item	Recipe or Product #	Planned # Servings	Planned Portion Size	Total Planned Quantity	Actual # Servings	Actual Quantity Used	Leftovers
<b>Milk</b>							
1% plain		70	8 oz.	70	70	70	0
Fat-free, chocolate		65	8 oz.	65	62	62	3
<b>Meat/Meat Alternate</b>							
Chicken & Cheese Fajita w/ Roasted Peppers and Onions (1 oz eq chicken + ½ oz eq cheese)	E-6	135	2 oz.	270 oz.	130	130	5
<b>Grain</b>							
Whole Wheat Tortilla		135	1	135	135	130	5
<b>Vegetable Subgroups</b>							
<b>Dark Green</b>							
Spinach/Romaine	S-1	135	1 C	135 C	67.5 C	65 C	2 ½ C
<b>Red/Orange</b>							
Tomato Salsa	C-1	135	¼ C	33 ¾ C	130	32 ½ C	1 ¼ C
<b>Legumes</b>							
Black Beans	L-5	135	¼ C	33 ¾ C	130	32 ½ C	1 ¼ C
<b>Starchy</b>							
<b>Other</b>							
<b>Fruit</b>							
Peach Cup		135	½ C	67 ½ C	135	65	2 ½ C
Diced Pears		135	½ C	67 ½ C	135	65	2 ½ C
<b>Condiment/Other</b>							
Ranch Dressing	D-1	135	1 Tbsp	135	135	135	0



## Lesson 3: Forecasting

**Objective:** Recognize key information when forecasting the usage of menu items.

### **Forecasting**

Forecasting is the process of determining future needs by evaluating past performance, present conditions, and future indicators. Regardless of the average daily participation (ADP) of the district, accurate forecasting provides critical and valuable information. This information benefits both the school district and potential distributors who are considering bidding on the items in the solicitation. For the purpose of this training we will focus on forecasting as it relates to meal preparation.

#### **What does forecasting include?**

Write your responses here.

**Have you ever noticed a situation where the production record identified a particular quantity to be prepared and the staff produced just a “little extra”? What are some possible implications of this action?**

**Financial Control in Food Preparation y**

Some ways to enhance financial control during food preparation include

- utilize batch cooking,
- improve food preparation techniques and processes, and
- focus on portion control, and
- reduce waste.

**(Workbook Activity): Forecasting Worksheet**

Review different forecasting scenarios. Complete the calculations.

- Scenario: Number of Servings to Prepare
- Scenario: Extra Servings
- Scenario: Batch Cooking
- Scenario: Portion Control—Tilapia Garnished with Citrus Sauce



## Forecasting Worksheet

### Scenario: Number of Servings to Prepare

**Directions:** Complete the calculations.

After reviewing the production records and ADP for the past 3 months, your estimated meal count is 750. This estimated count is increased because the school nutrition department has implemented nutrition education into the classroom and students are helping to plan healthier options. The weather is still very warm. The menu will be served on a Monday.

The estimate serving percentages for each item is as follows:

- 50% (.50) Grilled Teriyaki Chicken Breast on Whole Grain Bun
- 40% (.40) Fish Tacos with a Whole Grain Tortilla
- 10% (.10) Chef Salad with Multi Grain Roll

To calculate the number of servings needed for each menu item, multiply the estimated percentage by the estimated total meal count to determine the number of servings to prepare.

- Estimated Percentage x Estimated Total Meal Count = Number of Servings to Prepare
- Forecast how much of these items will be prepared to meet the estimated 750 meal count.

#### Sample Forecasting Number of Servings to Prepare

Estimated Percentage	x	Estimated Total Meal Count	=	Number of Servings to Prepare
Meal Count	x	Chicken Breast	=	Prepare
Meal Count	x	Fish Tacos	=	Prepare
Meal Count	x	Chef Salad	=	Prepare



## Forecasting Worksheet, continued

### Scenario: Extra Servings

**Directions:** Complete the calculations and answer the question(s) at the end of the activity. Whole grain-rich pasta served with turkey marinara is a popular menu item. The production record indicates to prepare 300 servings of the turkey marinara sauce and the whole grain-rich pasta. The staff determines there must be a mistakes and prepares 500 servings. You are concerned about food cost and want to illustrate the cost of over-production of the whole wheat pasta served with turkey marinara sauce.

- A serving of turkey marinara sauce cost is \$0.37 and whole grain-rich pasta is \$0.08 for a total cost of \$ 0.45.
- The menu item will be served 36 times throughout the school year.

#### Determine the Extra Servings Produced

Actual Quantity Prepared	-	Estimated Quantity	=	Extra Servings Produced
<b>Servings</b>	-	<b>Servings</b>	=	<b>Servings</b>

#### Determine Cost of Extra Servings Produced

Extra Servings Produced	x	Cost per Serving	=	Cost of Extra Servings Produced
<b>Servings</b>	<b>x</b>	<b>Cost</b>	=	<b>Extra Cost</b>

#### Total Cost of Extra Servings

Cost of Extra Servings Produced	x	Number of Times Served	=	Total Cost of Extra
<b>Extra Cost</b>	<b>x</b>	<b>Times Served</b>	=	<b>Total Cost</b>

## Forecasting Worksheet, continued

### **Scenario: Batch Cooking**

**Directions:** Complete the calculations.

Batch cooking and “just-in-time” (JIT) cooking are terms often used interchangeably. These terms refer to cooking in small quantities to maintain high quality throughout the serving period. The amount prepared at a given time should not exceed what can be served or is needed on the line in an established amount of time (15–30 minutes). Batch cooking ideally takes place continuously throughout the meal service period to guarantee quality.

To ensure the highest quality product and reduce waste, batch cooking is the standard procedure in the school meals operation. The first meal service begins at 10:50 a.m., and the second meal service begins at 11:20 a.m. Each pan of vegetable pizza takes 10 minutes to cook and 5 minutes to record temperatures.

- Pizza appears on the menu 30 times throughout the school year.
- Before the employees practiced batch cooking, the production records indicated 20 individual pizzas left at the conclusion of meal service.
- After implementing batch cooking, only 3 individual pizzas are left.
- The individual cost of a pizza is \$0.79.

#### **Pizza Savings**

Leftover Pizza Count Before Batch Cooking	-	Leftover Pizza After Batch Cooking	=	Extra Pizzas Produced prior to Batch Cooking
<b>Extra Pizzas</b>	-	<b>Extra Pizzas</b>	=	<b>Extra Pizzas</b>

#### **Total Reduced Pizza Count**

Extra Pizzas Produced	x	Number of Times Served	=	Total Reduced Pizza Count
<b>Extra Pizzas</b>	<b>x</b>	<b>Times Served</b>	=	<b>Pizzas</b>

## Forecasting Worksheet, continued

### Total Savings

Total Reduced Pizza Count	x	Cost per Pizza	=	Total Savings
<b>Pizzas</b>	<b>x</b>	<b>Cost</b>	<b>=</b>	<b>Savings</b>

## Forecasting Worksheet, continued

### **Scenario: Portion Control—Tilapia Garnished with Citrus Sauce**

Portion control is essential for controlling and maintaining food costs. Serving portions larger than planned will negate any savings achieved through controlled purchasing and food production. Portion control is also essential to maintaining the integrity of production records, standardized recipes, and nutritional analysis. Portion control also helps teach customers about age-appropriate portion sizes.

**Directions:** Complete the calculations.

Tilapia with citrus sauce is on the menu. Each 2-oz portion is neatly placed in the steam table pan and the students can't wait to select this favorite menu item.

- The line server gives the first 250 students an additional 1-oz portion of the tilapia every time the menu item is served.
- Tilapia is on the menu 30 times throughout the school year.
- A 2-oz portion of tilapia cost \$0.46.

#### **Cost of Extra Portion Tilapia Per Meal**

Cost per Tilapia	x	Students	=	Cost of Extra Portion Tilapia per Meal
<b>Cost</b>	<b>x</b>	<b>Students</b>	<b>=</b>	<b>Cost</b>

#### **Total Extra Cost**

Cost of Extra Tilapia per Meal	x	Number of Times on the Menu During the Year	=	Cost of Extra Portion Tilapia per Meal
<b>Cost</b>	<b>x</b>	<b>Times</b>	<b>=</b>	<b>Extra Cost</b>

## Lesson 4: Menu Item Costs

**Objective:** Calculate the cost of a menu item. .

### **Menu Item Cost**

Calculating the amount of food to purchase is an important part of financial management. It is important to buy enough to meet the needs of a recipe or service for the portion sizes required, but attention should be paid to not purchase too much. For example, some fresh vegetables, such as celery and lettuce, have a much lower yield after peeling, trimming, and discarding outer leaves. Also, the cooked weight of meat is less than the purchased weight when purchased raw. In determining purchase quantities, the school nutrition manager should be aware of these losses and purchase accordingly.

### **Food Buying Guide**

The *Food Buying Guide Calculator for Child Nutrition Programs* is a very useful tool to assist with determining the amount of food to purchase. Remember, the *Food Buying Guide* only provides an estimate of the amount of food to purchase. The *Food Buying Guide* calculator can be accessed via the following link: <http://fbg.theicn.org>.

### **As Purchased (AP) and Edible Portion (EP)**

Information provided in the recipe determines the type and quantity of food to purchase. For example, if a recipe contains chopped, fresh, onions the quantity to purchase or the As Purchased (AP) amount can differ tremendously from the Edible Portion (EP) amount.

*As Purchased* and *Edible Portion* are key concepts to understand in inventory management.

- AP refers to the weight of the product as it exists when purchased.
- EP refers to the part of the product that can be consumed. The AP weight is greater than the EP weight.

Many factors contribute to calculating the amount of food needed to purchase to equal the amount of food needed for a recipe or service. In the next activity, we are going determine whether to order untrimmed fresh broccoli or trimmed fresh broccoli florets. Both products are acceptable.

**(Workbook Activity): Purchasing Decisions Worksheet**

Complete the steps to calculate the cost of a product.



## Purchasing Decisions Worksheet

**Directions:** Complete the steps to calculate the cost of a product.

### Scenario: Purchasing Decision: Broccoli

For an upcoming menu, the manager is determining whether to order untrimmed fresh broccoli or trimmed fresh broccoli florets. Both products are acceptable.

#### **Broccoli, fresh, untrimmed**

- 100—½ cup EP servings will require 19.75 lb of AP product
- Cost per pound is \$1.29 lb
- Requires 60 minutes of labor before portioning into ½ cup serving size
- Labor cost \$11.70/60 minutes

#### **Cost of Broccoli, Fresh, Untrimmed**

Amount of Broccoli to Purchase	x	Cost per Pound	=	Purchase Cost of Broccoli, fresh, untrimmed
19.75 lb	x	\$1.29 per lb	=	<b>Purchase Cost</b>

#### **Cost of Broccoli, Fresh, Untrimmed with Labor**

Purchase Cost of Broccoli, fresh, untrimmed	+	Labor Cost	=	Total Cost of Broccoli, fresh, untrimmed
\$25.48 Purchase Cost	+	\$11.70 per 60 Minutes	=	<b>Total Cost</b>



## Purchasing Decisions Worksheet, continued

### Broccoli, fresh, florets, trimmed, ready-to-use

- 100—½ cup EP servings will require 7 lb of AP product
- Cost per pound is \$2.08 lb
- Requires 15 minutes of labor before portioning into ½ cup serving size.
- Labor cost \$11.70/60 minutes or \$2.93/15 minutes

#### Cost of Broccoli, Fresh, Florets, Trimmed, Ready-to-Use

Amount of Broccoli to Purchase	x	Cost per Pound	=	Purchase Cost of Broccoli, fresh, florets, trimmed
7 lb	x	\$2.08 per lb	=	<b>Purchase Cost</b>

#### Cost of Broccoli, Fresh, Florets, Trimmed with Labor

Purchase Cost of Broccoli, fresh, trimmed	+	Labor Cost	=	Total Cost of Broccoli, fresh, florets, trimmed
\$14.56 Cost	+	\$2.93 per 15 Minutes	=	<b>Total Cost</b>

Which product is less expensive?

Answer:

What are the factors to consider before deciding to purchase one product over the other?

Example responses



## Lesson 5: Product Screening

**Objective:** Create a sample product screening evaluation tool.

### **Screening Products**

Some schools may find that their customers prefer certain brands, which increases the number of meals served. The purpose of conducting a screening is to provide a list of preapproved, equal product brands in the solicitation document. Federal regulations clearly forbid specifying only a brand name product instead of allowing a preapproved equal product to be offered.

### **(Workbook Handout): Product Screening Chart**

Review and discuss the following **Product Screening Chart**.

## Product Screening Chart

The purpose of conducting a screening is to provide a list of preapproved, equal product brands in the solicitation document. The procurement procedures must ensure maximum full and open competition. Federal regulations clearly forbid specifying only a brand name product instead of allowing a preapproved equal product to be offered.

General Information	Criteria Quantifier
<p>Screening products is not required. SFAs should be careful to ensure they do not inadvertently exclude potential vendors.</p> <p>Before beginning the screening process, determine quantifiers of what is wanted or expected for the product.</p> <p>The three ways of screening products include paper, appearance, and taste screenings.</p> <p>Establishing the evaluation criteria in advance may reduce the possibilities of future bid protests.</p>	<ul style="list-style-type: none"> <li>■ Conduct paper, appearance, and taste screening separately and establish the criteria for an acceptable product. Each type of screening will have a different evaluation process.</li> <li>■ Determine a method to review brands for prior approval.               <ul style="list-style-type: none"> <li>○ All screening evaluations should allow for all potential vendors to provide a product for screening during the solicitation period (e.g., public advertisement).</li> </ul> </li> <li>■ Establish procedures to review brands for prior approval               <ul style="list-style-type: none"> <li>○ even doing so during the solicitation process,</li> <li>○ after the solicitation is published, and</li> <li>○ before bids/responses are due.</li> </ul> </li> <li>■ Provide all interested potential respondents with a copy of the screening procedure.</li> <li>■ Log all samples received from vendors.               <ul style="list-style-type: none"> <li>○ Keep accurate records of all three screenings. You may be asked to justify your choices.</li> </ul> </li> </ul>

## Product Screening Chart, continued

Paper Screening	Criteria Quantifier
<p>A paper screening is the process of reviewing the product label provided by the distributor. The label contains a description of the product, the code number, the ingredients, and a nutritional analysis. The Buy American provision applies to agricultural commodities produced in the United States and a food product that is processed in the United States when purchased for serving in the school meals program.</p> <p>Schools must purchase domestic commodities and products, to the maximum extent practicable (2 CFR 210.21(d)). If the product has passed the label and nutritional screening, proceed to the appearance screening.</p>	<ul style="list-style-type: none"> <li>■ Review the product label provided by the distributor. For processed food products, does the manufacturer's product information sheet include specific information about the percentage of domestic foods to produce and process the product in the United States? (Substantial means 51% or more is domestic).</li> <li>○ The label contains a description of the product, the code number, the ingredients, and a nutritional analysis. If the product has passed the label and nutritional screening, and is processed, review the product information sheets for specific information about domestic products produced and processed in the United States. Obtain an attestation to confirm if the information is not available on the label or product information sheets.</li> <li>■ Determine if the product complies with the specifications.</li> <li>■ Confirm the product meets the federal guidelines for the SNPs.</li> <li>■ Determine the meal pattern contribution.</li> <li>■ Calculate the cost based on per serving or per unit price.</li> <li>■ Determine if the product is affordable.</li> <li>■ Determine the labor cost to prepare the product.</li> <li>■ Identify possible menu items.</li> <li>■ Proceed to the appearance screening.</li> </ul>

## Product Screening Chart, continued

Appearance Screening	Criteria Quantifier
<p>An appearance screening is the process of examining the appearance of the sample. The most important aspect of the appearance screening is the product itself.</p> <p>Before beginning the appearance screening, determine evaluation quantifiers of what is wanted or expected for the appearance of the product. For instance, the roll should be golden brown with a slightly crunchy crust; a baguette would be long and thin and would not pass appearance screening if it looked like a Kaiser roll.</p> <p>If a consensus cannot be agreed upon what the product should look like, it will be impossible to determine if the product passes this screening.</p>	<ul style="list-style-type: none"> <li>■ Purchase the products for the appearance screening. Not only is purchasing the product a good business practice it will ensure the product SKU/code will be the actually product used for the appearance screening.</li> <li>■ Determine minimal acceptable and unacceptable attributes</li> <li>■ Include sample quantifiers such as:               <ul style="list-style-type: none"> <li>○ Consistent in shape</li> <li>○ Light brown in color</li> <li>○ Even color</li> <li>○ Even cut pieces</li> <li>○ Topping evenly spread</li> <li>○ Minimal leaves</li> <li>○ Fill ratio</li> </ul> </li> <li>■ Determine the attributes of the package. For example               <ul style="list-style-type: none"> <li>○ Does it come in an individually wrapped package? If so, is it easy to open?</li> <li>○ Is the packaging attractive?</li> <li>○ Does it come layered in a case with parchment between the layers?</li> <li>○ Does the packaging maintain the integrity of the product during shipping and handling?</li> </ul> </li> </ul>



## Product Screening Chart, continued

Taste Screening	Criteria Quantifier
<p>A taste screening is the process of conducting a taste test with your customers. Some products are too highly seasoned, too greasy, too salty, or too sweet. The goal is to offer customers good tasting, high quality products.</p> <p>Once the product(s) have gone through the adult taste screening, it is time for the student customers to give their opinion. Taste testing is the final screen and determines whether the brand or the product will be preapproved to be placed on the bid.</p> <p>A simple method for taste testing with elementary students involves using two containers, one labeled with a smiley face and one with a frown. The students vote by placing a small piece of color paper in the appropriate container—smiley for acceptable and frown for unacceptable.</p> <p>In the same manner, at the junior and high school levels, the containers can be labeled either acceptable or unacceptable.</p>	<ul style="list-style-type: none"> <li>■ Determine in advance the criteria for documenting the results of the taste test.</li> <li>■ Purchase the products for the taste test. Not only is purchasing the product a good business practice it will ensure the product SKU/code will be the actually product tested.</li> <li>■ Create an evaluation tool. Consider including a description for the texture, flavor, seasoning, how the product holds after cooking, and overall acceptance of the product.</li> <li>■ Determine in advance an acceptability percentage such as 85% approval for products to be placed on the bid.</li> <li>■ Prepare the product according to manufacturer's direction.</li> <li>■ Do not identify the brand name of the product.</li> <li>■ Prepare similar products for tasting at approximately the same time and hold product at proper temperatures.</li> <li>■ Set up taste test area. Remember to include napkins, plates, spoons, forks, knives, and water to rinse mouth between tastings.</li> <li>■ Conduct a taste test with adults and students.</li> </ul>

Source: Institute of Child Nutrition. (2017). *Forecasting the procurement of foods instructor's manual*. University, MS: Author.

**Sample Screening Evaluation Tool**

We are now going to take a few minutes to apply the concepts for screening products. To do this, we will divide into small groups. Each group will create an evaluation tool for hummus using one of the following methods:

- Paper screening
- Appearance screening
- Taste screening

**(Activity): Hummus Screening Evaluation Tool**

Place your group's assigned topic as a header on your flip chart paper, and create a screening evaluation tool. At the conclusion of this activity, groups will take turns reporting out.

## Lesson 6: Inventory Control

**Objective:** Identify inventory controls that contribute to a financially sound school nutrition program.

### **Inventory**

An important financial management principle is minimizing the total dollar investment in inventory. This can be analyzed by calculating inventory turnover. Inventory turnover is calculated by dividing the value of the average inventory for the period into the cost of food used during the period. A general guideline is that inventory should turn over three to five times per month.

The inventory system includes effective procedures for: receiving, storage, accounting for items removed from inventory, counting of items in stock, and calculating the financial value of the inventory.

### **Inventory Methods**

There are two methods of recording the foods and supplies in stock: perpetual inventory and physical inventory. Perpetual inventory is an up-to-date, running record of each item in stock based on tracking items as they are received and used. This information may be maintained by using computers, scanners, and universal bar codes. Perpetual inventories must be checked occasionally with a physical inventory. Physical inventory is an actual count of the goods on hand, usually taken at the end of each month.

**Single Inventory Concepts**

When calculating the costs of food used, the value of USDA Foods must be considered. USDA has recently taken steps to more fully integrate USDA Foods with other commercial foods utilized by school nutrition programs. This has resulted in purchased items and USDA Foods being accounted for as one single inventory. The intent is to reduce costs and provide more timely deliveries. Under the single inventory concept, cost of food used may include the value of USDA Foods.

- USDA Foods and purchased items do not need to be separate inventories.
- Most USDA Foods are packed with commercial labels instead of USDA labels.
- Procedures may differ from state to state in USDA Foods inventories.
- Some states continue to provide pre-case value for USDA Foods. The USDA Foods value is entered into the district accounting records separately from the cost of purchased food. This allows the school district to calculate both the cost of purchased food used and the value of USDA Foods used in the reporting period.

**Receiving Foods**

Receiving is an important part of inventory management and quality and cost control. The entire receiving process requires consistent control. Part of the consistent control is ensuring food products received are the actual food products ordered. Some receiving tips include the following best practices:

- Develop Standard Operating Procedures.
- Provide a copy of the order to the person receiving the delivery.
- Check the products delivered against the products ordered. Do not accept unapproved product substitutions.
- Use a two-wheel truck and/or carts to move products from the receiving dock.
- Follow the hazard analysis and critical control points (HACCP)-based food safety plan.
- Keep a clipboard or other flat surface available to assist in the receiving process.

- Communicate product shortages and quality concerns to the delivery person and the appropriate SFA staff member.

Each school district has a system for communicating the brand and code numbers of products preapproved during the contract award. This information is key for monitoring contractor performance, a requirement of 2 CFR 200.318(b). When school districts do not provide brands and code numbers on their resulting contract, the site receiver must check the products against the specifications. The most effective approach to improving the ordering and receiving process is to award the brand and code number in the resulting contract.

One method of ensuring products solicited and awarded are the products ordered and received is to provide the staff with an Ordering and Receiving Guide of Approved Products.

Staff with responsibilities of ordering and receiving products can use the guide to ensure

- the correct products are ordered, and
- the correct product, brand, code, and pack is received at the right price.

#### **(Workbook Handout): Inventory Good Practices**

#### **(Workbook Handout): Storage Area Good Practices**

Review the Inventory Good Practices and Storage Area Good Practices handouts

## Inventory Good Practices

Perpetual inventory is an up-to-date, running record of each item in stock based on tracking items as they are received and used. This information may be maintained manually or electronically by using computers, scanners and universal bar codes. Perpetual inventories must be checked occasionally with a physical inventory.

Physical inventory is an actual count of the goods on hand, usually taken at the end of each month. The following are good practices for inventory:

- Train employees on how and when to take inventory.
- For security purposes and whenever possible, the person who is responsible for day-to-day management of the inventory should not participate in counting the inventory.
- One person should count and another should record.
- Items should be inventoried by location and in the order the products are located in the storage area. Depending on the operation, it may be standard practice to open cases and count items individually. Some operations will only track counts of unopened cases. The important point is whichever system is used, be consistent each time you are taking inventory.
- Determine the date the inventory will be counted, such as the close of business at the end of the month, and schedule dates regularly. Most operations count and value inventory monthly.
- Record all inventory delivered in the accounts payable for the month.

## Storage Area Good Practices

### Optimal Storage Organization

- Ensure accessibility to both receiving and food production to reduce transport time and corresponding labor costs.
- Develop policies and procedures addressing security, and theft.
- Determine adequate space, appropriate shelving, ventilation, and lighting.
- Keep accurate, working thermometers in cold holding and dry storage areas.

### Assigned spaces for each item

- Store fast-moving items close to the storage entrance.
- Consider high-density shelving to increase shelf space in a limited space “footprint.”
- Consider storing items by category (e.g., canned juices) and then alphabetically (e.g., apple juice, cranberry juice, grape juice).
- Assign space for each type of food item. An organized storeroom requires less space than if foods are placed haphazardly in an empty area. A great deal of time is saved by not having to hunt for items.
- Consider arranging the storeroom in the same order as major vendor order guides. This will increase your efficiency in placing orders, completing inventory, and tracking inventory value by category. If par levels have been established, there should be a consistent inventory value in each category. A significant increase or decrease will be cause for review.
- Include appropriate food-grade shelving in all storage areas. This will allow proper air circulation and keeps food sufficient distances from the floor, walls, and ceiling.
- Require the “first in, first out” (FIFO) method of storage be implemented.
- Date products as they are received and store newly delivered products behind products already in stock. An exception to this guideline occurs when a newly delivered product has an earlier expiration date than previously received product.

## Storage Area Good Practices, continued

### Food Safety Guidelines for Storage

Follow local health department regulations for temperature guidelines. Recommended temperature guidelines include:

- Dry storage area kept at 50°–70 °F;
- Refrigerated storage kept at 32–39 °F; and
- Freezer storage kept at or below 0 °F.

### Storage Areas

Arrange your storage area by product category.

- Beverages, Milk Products, Water
- Cereals (prepared)
- Cereals and flour
- Sugar (granulated, brown, confectioners)
- Crackers, Snacks
- Baking/Cooking Supplies (extracts, spices, herbs, baking powder, baking soda)
- Oils and Shortening
- Condiments (bulk and individual)
- Fats and Oils
- Fruit (canned)
- Fruit (dried)
- Fruit Juices
- Vegetables (canned)
- Specialty Items



**Value of Inventory**

The value of the inventory can be assigned based on three methods: actual purchase price, replacement cost or the weighted average of all inventory in stock.

- The actual purchase price is the invoice price for the product at the time it was purchased. Although this is a good method, if you have a newer product at a different price, maintaining accurate records and costs can be challenging.
- Replacement cost is the most recent price paid for the product. This is the least confusing method of calculating inventory price.
- Weighted average is the average price paid for each product. Calculate average price by multiplying the number of units of each product in the beginning inventory plus any purchased during the month by the actual purchase price. Add prices for all units and divide by total number of units available. This is time consuming and may not be significantly more accurate.

Each method requires data management and record keeping. Whichever method is used, school nutrition managers should consistently use the same method.

**Inventory Turnover**

An important tool in inventory management is calculating inventory turnover. The greater the inventory turnover, the more efficient the operation is in controlling the amount of product held in inventory. Additional benefits of inventory turnover include:

- ordering quantities to ensure items are available for projected menus,
- reducing risk of theft because items missing are easily identified, and
- rotating inventory can help to reduce waste, and ensure higher quality products.

**Food Costs**

Food cost is controlled by:

- following standard operating procedures,
- maintaining the correct inventory level,
- having needed product on hand,
- preventing the need for a more expensive substitution for the missing product, and
- ensuring food is used in a timely manner

**(Activity): Inventory Turnover Worksheet**

Complete the calculations.

## Inventory Turnover Worksheet

**Directions:** Complete the calculations.

April Purchases

<u>Company</u>	<u>Purchase Foods</u>
XYZ Foods	\$20,000.00
ABC Dairy	\$ 3,000.00
GH Bakery	\$ 2,000.00
USDA Foods Received Value	\$ 5,000.00

- Add the XYZ Foods, ABC Dairy, and GH Bakery purchase to determine the Total Purchased Foods.
- Add the Total Purchased Foods and the USDA Foods Value Received to determine the Value of April Foods available.

### Total of Food Purchased for April

XYZ Purchases	+	ABC Dairy Purchases	+	GH Bakery Purchases	=	Purchased Foods Total
<b>Purchases</b>	<b>+</b>	<b>Purchases</b>	<b>+</b>	<b>Purchases</b>	<b>=</b>	<b>April Purchases</b>

### Value of April Foods

Purchased Foods Total	+	USDA Foods Received Value	=	Value of April Foods Total
<b>April Purchases</b>	<b>+</b>	<b>USDA Foods</b>	<b>=</b>	<b>Value of April Foods</b>

## Inventory Turnover Worksheet

Total Value of April Foods      \$30,000.00

March Ending Inventory      \$10,000.00

April Ending Inventory      \$12,000.00

- Add the Value of April Foods to the March ending inventory and then subtract the April ending inventory to determine the April Cost of Food Used.
- Divide the April Cost of Food Used by the average of March and April inventories to determine Inventory Turnover. The average inventory is determined by dividing the combined dollar amount of the beginning inventory and ending inventory by two.

### April Cost of Food Used

Value of April Foods	+	March Inventory	-	April Inventory	=	Cost of Food Used
<b>April Total Value</b>	+	<b>March Inventory</b>	-	<b>April Inventory</b>	=	<b>Cost of Food Used</b>

### Average Inventory

Ending Inventory	+	Ending Inventory	÷	2	=	Average Inventory
<b>March Inventory</b>	+	<b>April Inventory</b>	÷	<b>2</b>	=	<b>Average Inventory</b>

### Inventory Turnover

April Cost of Food Used	÷	Average March/April Inventory	=	Inventory Turnover
<b>Cost of Food Used</b>	÷	<b>Average Inventory</b>	=	<b>Inventory Turnover</b>

**Par Stock**

Par stock is a predetermined inventory quantity for a particular item and serves as an indicator on when to reorder the product. A par stock is established through a thorough evaluation of product use over the amount of time between deliveries. For example, if there are weekly deliveries and production records show three cases of fresh, sliced onions are used each week, the school-based operation should keep three cases of onions in inventory.

For high-use items with a long shelf life, it is sometimes beneficial to keep an extra case on hand. The quantity to keep on hand will be reflected in the par stock number. This provides “cushion” for emergencies but sets a suggested limit to reduce the total dollars tied up in stored product.

**Theft and Fraud Prevention**

A key component of financial management is reviewing practices and procedures to minimize the risk of fraud or theft. These systems are not only related to accounting and reporting, but also relate to the organization's communication processes, internal and external policies, and procedures for handling funds received and expended by the organization.

Preventing theft is another aspect of financial management. Whether the theft is money or food, the impact of theft affects the operation's financial performance. Let's take about 10 minutes and identify some ways to prevent customer and employee theft in the school nutrition operation.

**(Workbook Handout): Theft Prevention Measures Handout****(Workbook Handout): Cash handling Procedures Good practices**

Review the Theft Prevention Measures handout and Cash Handling Procedures Good Practices handout.



## Theft Prevention Measures

- Train staff to watch customers.
- Locate cashier at exit where she or he can see the entire line.
- Do not cash checks. Accept checks only for amount of purchase or in amount of prepayment.
- Request heavy coats remain outside the serving area.
- Make sure food items are attended at all times.
- Install security cameras.
- Do not allow leftovers to be taken home. The practice of allowing leftovers to be taken home is a violation of federal regulations.
- Do not allow employees to bring backpacks or large bags into the school nutrition operation.
- Distribute keys sparingly and keep a key distribution log/chart. Stamp keys with a notation to indicate keys cannot be duplicated. Periodically inventory keys to ensure all keys are accounted for and distributed to the intended user. If key is lost or not returned, re-key locks.
- Maintain and monitor school nutrition inventory in warehouse and at local school.
- Date products as delivered to warehouse and at local school.
- Keep storeroom and back door locked.
- Check food and supplies when delivered. Weigh items sold by pound; count items sold by count. Check products against specifications to determine whether correct products are being delivered. Do not allow for early morning drop-offs or unattended deliveries.
- Require delivery tickets to be signed by an authorized person before they will be paid and require all deliveries to be checked before signing.
- Check prices charged to determine if they are correct. Check the multiplication in extending prices and addition on the delivery tickets. Compare delivery tickets and bills.
- Do not give keys to delivery people.

## Cash Handling Procedures Good Practices

- Define responsibilities for handling cash. Those who actually handle cash should not have access to or be responsible for the cash records.
- Designate a limited number of employees who are each responsible for cash handling during a designated period.
- Have money counted by two or more people in an enclosed place and deposit money daily.
- Watch for signs of non-recorded transactions such as piles of coins or invoices in an odd location.
- Take individual register readings after each meal period. A manager or other supervisory member who does not handle cash should do this. The cashier should not have access to the reading until after he/she has counted the cash drawer.
- If possible, assign separate cash drawers to different cashiers for each shift.
- Train supervisory staff to operate the cash register so they can substitute for operators taken ill or other such emergencies.
- Rotate all cashiers to non-cash handling responsibilities for a period of time (about a week) to ensure accountability.
- Keep all monies locked in a safe or designated area until deposited.
- Train cashiers on how to give change, handle cash, and process checks and other types of payment.
- Determine the beginning balance for each cashier's drawer and establish policies and procedures to verify the balance before each shift.
- Ensure all sales are entered into the register at the point of sale.
- Verify cash sales through meal counts, inventory records, or production records.
- Retain deposit receipts and send duplicate deposit tickets to another office.
- Review cash handling policies and update as needed.
- Establish specific policies for reconciling vending sales.



## Lesson 7: Meal Equivalents

**Objective:** Calculate the meal equivalents for different scenarios.

### **Food Costs**

One of the most important aspects of administering the SNP is managing food cost. It is important for school nutrition managers and directors to monitor food costs on a regular basis. High food costs are often the problem when a school or school district nutrition program is experiencing a financial loss. Calculating the cost of food is vital in order to:

- determine whether costs are within guidelines;
- ascertain if there are sufficient funds to pay expenditures;
- establish the cost for each meal equivalent served; and
- prevent waste and food theft through monitoring food use

**What are some ways to reduce food cost?**

### **Meal Equivalents**

Determining meal costs begins with calculating meal equivalents. Please note that FNS does not prescribe one particular method in order to calculate meal equivalency. However, the most accurate method for developing a lunch/meal equivalent rate is based on the full cost of producing a reimbursable lunch. The lunch/meal equivalent rate must be set no lower than the free lunch reimbursement rate plus the value of USDA Foods.

It is important to recognize not all states and school districts convert adult meals to meal equivalents using the same method. Check with your State agency for guidance.

**Equate Meals to a Standard**

The student reimbursable lunch is the standard unit of measurement most often used.

Counting meal and food sales other than lunches is not as clear-cut as counting the traditional lunch. Thus, a method for converting operational data for all food sales, including student lunches, must be used to determine the equivalent of a meal. It is important to remember a meal equivalent is not a unit of production but a calculation which allows the operator to equate all meals to a standard: the student reimbursable lunch.

By converting all food sales to meal equivalents, the school nutrition manager can determine a per meal cost and productivity ratios such as meals per labor hour.

**Meal Cost Meal Equivalent Calculation**

Meal costs based on meal equivalents allow school nutrition administrators to better benchmark financial performance, both internally and externally. The number of meal equivalents served is determined by converting breakfasts, lunches, afterschool snacks, and nonprogram revenue such as a la carte, to a reimbursable student lunch standard for the purpose of financial reports, including productivity measurement reports.

**(Workbook Activity): Meal Equivalent Worksheet**

Complete the calculations.

## Meal Equivalents Worksheet

### Scenario: Breakfast Meal Equivalents

**Directions:** Complete the calculations. It is important to recognize not all states and school districts convert adult meals to meal equivalents using the same method. For this reason, check with your State agency for guidance

For this example, a SNP served 239 students reimbursable breakfasts. For this activity please round to the next whole number and use the following as a conversion factor.

- 1 lunch = 1 lunch meal equivalent
- 0.67 Conversion Factor = (3 breakfasts for every 2 lunches or  $2 \div 3 = 0.67$ )
- 3 snacks = 1 lunch (1 divided by 3 = 0.33)
- Nonprogram food sales = Revenue from food sales  $\div$  (Current free lunch reimbursement + current USDA Foods value/lunch)

### Breakfast Meal Equivalents

Total Number of Breakfasts Served	x	Breakfast Conversion Factor	=	Meal Equivalents
<b>Breakfast Served</b>	<b>x</b>	<b>Conversion Factor</b>	<b>=</b>	<b>Meal Equivalents</b>

Note: Round Meal Equivalents Other Foods to nearest whole number.

## Meal Equivalents Worksheet, continued

### Scenario: After School Snacks

**Directions:** Complete the calculations. It is important to recognize not all states and school districts convert adult meals to meal equivalents using the same method. For this reason, check with your State agency for guidance

Afterschool snacks give children a nutritional boost and draw them into supervised activities that are safe, fun, and filled with learning opportunities. Using this equivalency, snacks can be converted to meal equivalents.

#### Conversion Factor

For this example, the SNP served 450 reimbursable afterschool snacks. For this activity please round to the next whole number and use the following as a conversion factor.

- 1 lunch = 1 lunch meal equivalent
- 0.67 Conversion Factor = (3 breakfasts for every 2 lunches or  $2 \div 3 = 0.67$ )
- 3 snacks = 1 lunch (1 divided by 3 = 0.33)
- Nonprogram food sales = Revenue from food sales  $\div$  (Current free lunch reimbursement + current USDA Foods value/lunch)

#### Calculating Meal Equivalents for Afterschool Snacks

Number of Snacks Served	x	Afterschool Snack Conversion Factor	=	Meal Equivalents
<b>Snacks Served</b>	<b>x</b>	<b>Conversion Factor</b>	<b>=</b>	<b>Meal Equivalents</b>

Note: Round Meal Equivalents Other Foods to nearest whole number.

## Meal Equivalents Worksheet, continued

### Scenario: NonProgram Food Sales

**Directions:** Complete the calculations. It is important to recognize not all states and school districts convert adult meals to meal equivalents using the same method. For this reason, check with your State agency for guidance.

Nonprogram food sales are all foods and beverages sold in the school nutrition operation other than reimbursable meals. Examples of nonprogram foods are a la carte, second student meals, and special function meals. Meal equivalent calculations for all nonprogram food sales are based on the annual federal reimbursement rate for students eligible for free lunch plus the entitlement USDA Foods value. The revenue from nonprogram food sales can be converted to meal equivalents.

- The school nutrition operation sold nonprogram food items on a given day that totaled \$434.00 in revenue
- SY 2016-2017 NSLP \$ 3.22 (Free Lunch Reimbursement plus 6 cents)
- SY 2016-2017 USDA (Entitlement) Foods Value \$0.23
- Convert the revenue from nonprogram food sales to meal equivalents.

### Calculating Meal Equivalents for Nonprogram Food Sales

Free Lunch	+	USDA Food Value	=	Revenue
Nonprogram Food Sales	÷	Revenue	=	Meal Equivalents Other Foods

Note: Round Meal Equivalents Other Foods to nearest whole number.

**Per Meal Costs**

One of the best benchmarks SNPs can use to evaluate the effectiveness of the nutrition operation in managing expenditures is the cost per meal or meal equivalent served. Calculating the cost of producing a meal or meal equivalent is essential to good financial analysis of the SNP. The calculation must be determined on a regular basis, preferably monthly. Examples of benchmarks are 40-43% food cost, 40-43% labor cost, and supply cost 4-6%, etc. against which monthly monitoring can be evaluated. This allows the school district to take action to correct the situation in a timelier manner when the costs to produce a meal exceed the revenue to cover those costs. Remember, cost may be higher at the beginning of the year when inventory levels are being built-up and forecasted participation estimates are being evaluated. Costs should be reduced but must be monitored to ensure this reduction occurs to achieve financial goals.

In order to determine meal costs, you must calculate the total expenditures for a given period, and the total meal/meal equivalents served for the same period. Meal cost should be determined for each expenditure category and for the total expenditures.

**(Workbook Activity): Per Meal Cost Worksheet**

Complete the calculations.

## Per Meal Cost Worksheet

### **Scenario: Determine the Expenditures for Period.**

**Directions:** Complete the calculations. It is important to recognize not all states and school districts calculate per meal cost using the same method. For this reason, check with your State agency for guidance.

#### **Calculating Per Meal Cost**

Meal cost is determined by dividing total expenditures by total meal equivalents. Meal cost can be calculated for any accounting period the school nutrition manager wishes to analyze. The example below provides an explanation of the total process for calculating the cost to produce a meal for a given period of time. To calculate Per Meal Cost

- Determine the expenditures.
- Calculate all meals and meal equivalents.
- Total all meal equivalents and lunches together.
- Divide total expenditures by total meal equivalents.

Calculations made at the school level serve as a tool for evaluating expenditures at that site. They may not necessarily reflect all costs associated with the district's school nutrition operation. Expenses may go beyond food and labor. Some other allowable school nutrition expenses include: supplies, equipment, purchased services, property repair and maintenance, electricity, fuel, water, transportation (e.g., fuel and oil), professional development, and indirect costs.

## Per Meal Cost Worksheet Answer Key, continued

For this example, the staff gathered all the daily cost information, including the following:

■ Food Costs	\$ 1,089.00
■ Labor Costs	\$ 1,189.50
■ Professional Development (PD) Costs	\$ 18.00
■ General Supplies Cost	\$ 80.20
■ Indirect Costs	\$ 217.15

### Determine the Expenditures for Period

Food Costs	+	Labor Cost	+	PD Cost	+	General Supplies	+	Overhead Costs	=	Total Expenditures
<b>Food Cost</b>	<b>+</b>	<b>Labor Cost</b>	<b>+</b>	<b>Professional Development Cost</b>	<b>+</b>	<b>General Supplies</b>	<b>+</b>	<b>Indirect Cost</b>	<b>=</b>	<b>Total Expenditures</b>

### Scenario: Calculate all Meals and Meal Equivalents.

After the total expenditures were calculated, the number of meal equivalents for each type of service was determined.

In ABC Elementary School, school nutrition staff members concerned about plate costs in their school decided to analyze meal costs on a daily basis.

On this particular day, the school nutrition operation served

- 700 student lunches
- \$93.00 in adult lunch sales
- 239 breakfasts
- 54 snacks in the afterschool care program



## Per Meal Cost Worksheet, continued

### Conversion Factor

For this example, a school nutrition program served 239 student reimbursable breakfasts. For this activity please round to the next whole number and use the following as a conversion factor.

- 1 lunch = 1 lunch meal equivalent
- 0.67 Conversion Factor = (3 breakfasts for every 2 lunches or  $2 \div 3 = 0.67$ )
- 3 snacks = 1 lunch (1 divided by 3 = 0.33)
- Nonprogram food sales = Revenue from food sales  $\div$  (Current free lunch reimbursement + current USDA Foods value/lunch)

### Lunch Meal Equivalents

Total Number of Lunches Served	x	Lunch Conversion Factor	=	Meal Equivalents
<b>Lunch Served</b>	<b>x</b>	<b>Conversion Factor</b>	<b>=</b>	<b>MEs Lunches</b>

## Per Meal Cost Worksheet, continued

### Nonprogram Food Sales Meal Equivalents Adult Sales (MEs)

Nonprogram Foods	÷	(Free Lunch Reimbursement	+	USDA Foods Value)	=	Meal Equivalents
<b>Adult Lunch Sales</b>	÷	<b>Free Lunch</b>	+	<b>USDA Foods Value</b>	=	<b>MEs Adult Sale</b>

### Breakfast Meal Equivalents

Total Number of Breakfasts Served	x	Breakfast Conversion Factor	=	Meal Equivalents
<b>Breakfast Served</b>	<b>x</b>	<b>Conversion Factor</b>	<b>=</b>	<b>MEs Breakfast</b>

### Afterschool Snacks Meal Equivalents (MEs)

Number of Snacks Served	x	Afterschool Snack Conversion Factor	=	Meal Equivalents
<b>Snacks Served</b>	<b>x</b>	<b>Conversion Factor</b>	<b>=</b>	<b>MEs Afterschool Snacks</b>

## Per Meal Cost Worksheet, continued

### Total Meal Equivalents (MEs)

Lunch	+	Adult Lunch Sale	+	Breakfast	+	After School Snacks	=	Total Meal Equivalents
<b>MEs Lunches</b>	<b>+</b>	<b>MEs Adult Sales</b>	<b>+</b>	<b>MEs Breakfast</b>	<b>+</b>	<b>MEs Afterschool Snacks</b>	<b>=</b>	<b>Total MEs</b>

### Scenario: Calculating Per Plate Meal Cost

Based on the staff's daily cost information, the manager determined that expenditures totaled \$2593.85 and the total meal equivalents totaled 908 for the period. To find the per meal cost, divide the total expenditures for the period by the total meal equivalents. This tells the school nutrition manager the cost of producing a meal equivalent on a per-plate basis for the period of time being analyzed.

### Per Meal Cost

Total Expenditures	÷	Total Meal Equivalents	=	Meal Cost
<b>Total Expenditures</b>	<b>÷</b>	<b>Total MEs</b>	<b>=</b>	<b>Meal Cost</b>



## Lesson 8: Labor Costs

**Objective:** Calculate labor costs.

### **Labor Costs**

Some labor costs, such as raises for employees or increases in the costs of health care, may be beyond control of the school nutrition manager or director. However, the use of labor hours and the number of employees hired at each school site is most often a decision that can be made by the school nutrition department. Most SNPs use the productivity index of meals per labor hour to monitor the efficiency of an operation and as a guide to determine staffing.

**What are some ways to control labor costs in a school nutrition operation?**

### **Staffing**

The school district's success in keeping labor and food costs within the established guidelines depends on the financial management skills of the entire SNP department, including the school nutrition program director, the site level managers, and the kitchen staff.

Managing scheduling and staffing is a critical part of financial management. Scheduling involves having the proper number of workers on duty to complete all tasks and at peak demand within the established time frames. Staffing is the determination of the appropriate number of workers needed for the operation to do the work that needs to be accomplished.

### **Scheduling**

The most important factor in controlling labor costs is the scheduling of employees. In addition to excessive labor costs, poor scheduling has other implications.

**What are some implications of poor scheduling?**

**Workbook Handout): Production Task Schedule Example**

Discuss the production task schedule as a group.

## Production Task Schedule Example

Utilizing a production task schedule can be helpful in assigning responsibilities and workload for meal preparation. The production task schedule can be quite simple, with a daily list of specific responsibilities for food preparation items by employees.

### Employee 1

- Serve breakfast.
- Complete production records and clean-up serving line.
- Prepare Romaine salad blend.
- Prepare fresh vegetables for the garden bar.
- Wash fresh fruit.
- Fill dressing and condiment containers.
- Set up garden bar by 10:45 a.m. and record temperatures.
- Monitor, fill, and refresh garden bar through the meal service.
- Assist others as needed.

### Employee 2

- Pan three-bean burritos and refrigerate.
- Pan pizza and refrigerate.
- Bake three-bean burritos at 10:40 a.m. and record temperatures.
- Bake pizza at 10:40 a.m. and record temperatures.
- Continue with batch cooking through the lunch period.
- Complete production records and clean-up serving line.
- Assist others as needed.

## Production Task Schedule Example, continued

Position	Time															
	6:00 a.m.	6:30 a.m.	7:00 a.m.	7:30 a.m.	8:00 a.m.	8:30 a.m.	9:00 a.m.	9:30 a.m.	10:00 a.m.	10:30 a.m.	11:00 a.m.	11:30 a.m.	Noon	12:30 p.m.	1:00 p.m.	1:30 p.m.
Employee 1		Serve breakfast.		Complete production records and clean-up serving line.	Prepare Romaine salad blend. Prepare fresh vegetables for garden bar. Wash fresh fruit. Fill dressing and condiment containers.					Set up garden bar and record temperatures.		Replenish garden bar and record temperatures.		Complete production records and clean-up serving line.		
Employee 2							Pan three-bean burrito and refrigerate. Pan pizza and refrigerate.			Bake three-bean burritos and record temperatures. Bake pizza and record temperatures.		Bake three-bean burritos and record temperatures. Bake pizza and record temperatures.		Complete production records and clean-up serving line.		

### **Full-Time Equivalent (FTE)**

Full-Time Equivalent (FTE) is a measure used to translate the number of hours worked into full-time equivalent hours. Generally, an FTE of 1.0 is equivalent to one full-time employee.

Holidays, sick leave, vacation, and other paid time off are not considered in FTE since that is time paid for but not worked.

### **(Workbook Activity): FTE Calculations Worksheet**

Complete the calculations.



## FTE Calculations Worksheet

**Directions:** Complete the calculations.

You have been asked to determine the total FTEs for your school nutrition operation. You have various work schedules for your employees. For this example, full-time equivalents are calculated using 40 hours a week as the standard. There are currently 12 employees on staff:

- Group A: 3 employees work 8 hours per day, 5 days per week
- Group B: 3 employees work 4 hours per day, 5 days per week
- Group C: 3 employees work 6 hours per day, 3 days per week
- Group D: 3 employees work 2 hours per day, 5 days per week

### Scenario: Total Hours Worked Per Day

Number of Employees	x	Hours Worked per Day	=	Total Hours per Day
<b>Group A</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group A</b>
<b>Group B</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group B</b>
<b>Group C</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group C</b>
<b>Group D</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group D</b>

## FTE Calculations Worksheet,

### Scenario: Total Hours Worked Per Week

Total Hours per Day	x	Number of Days per Week	=	Total Hours Worked per Week
<b>Total Hours/Day Group A</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group A</b>
<b>Total Hours/Day Group B</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group B</b>
<b>Total Hours/Day Group C</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group C</b>
<b>Total Hours/Day Group D</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group D</b>

## FTE Calculations Worksheet, continued

### Scenario: Total Hours Worked Per Week (All Groups)

Group A	+	Group B	+	Group C	+	Group D	=	Total Hours Worked /Week
<b>Hours Worked/Week Group A</b>	+	<b>Hours Worked/Week Group B</b>	+	<b>Hours Worked/Week Group C</b>	+	<b>Hours Worked/Week Group D</b>	=	<b>Total Hours Worked Week (All Groups)</b>

### Scenario: Total FTEs

Total Hours Worked per/Week	÷	Hours FTE	=	Total FTEs
<b>Total Hours Worked /Week All Groups</b>	÷	<b>Hours FTE</b>	=	<b>Total FTEs</b>

**Meals Per Labor Hour**

Meals per labor hour (MPLH) is a productivity index that is measured by dividing the total meal equivalents for a given period of time by the total number of productive paid labor hours for the same period. Meal equivalent calculations may vary from state to state based upon established standards. Check with your State agency for guidelines.

Productive labor hours are the actual hours assigned to a local school site and include all labor charged to and paid for by the SNP for work performed. If workers are paid for sick leave and a substitute is paid, then only the substitute labor should be included in the formula. While this may be difficult to calculate, sick leave should not be considered productive labor as it will distort the picture.

**What are some reasons for reducing labor cost?**

**What are some ways to increase participation or MPLHs?**

**(Workbook Activity): Meals Per Labor Hour Worksheet**

Complete the calculations.

## Meals Per Labor Hour Worksheet

### Scenario: ABC Elementary

**Directions:** Complete the calculation.

The school nutrition manager at ABC Elementary School and the district school nutrition administrator agreed that there is a need to increase productivity at the SNP site. The school nutrition manager reviewed the following information to analyze the existing productivity index.

- ABC Elementary School set a goal of 17 MPLH based on the type of meal service offered.
- Based on lunch, breakfast, snacks, and other sales, your calculations indicate 667 Meal Equivalents for this day.
- For this example, the current productive labor is 49 hours for a day. This includes all school nutrition employees including the manager.
- Round your answers to the nearest whole number.

### Desired Meal Per Labor Hours

<b>ME</b>	<b>÷</b>	<b>Desired MPLH</b>	<b>=</b>	<b>Desired Total Number of Labor Hours Day</b>
<b>Total ME Day</b>	<b>÷</b>	<b>Total Labor Hours Day</b>	<b>=</b>	<b>Desired Total Number of Labor Hours Day</b>

## Meals Per Labor Hour Worksheet, continued

### Labor Hours to Reduce

Current Labor Hours Day	-	Desired MPLH	=	Labor Hours to Reduce
<b>Current Labor Hours Day</b>	-	<b>Desired Total Number of Labor Hours Day</b>	=	<b>Labor Hours to Reduce</b>

**Conclusion**

Look at all the take-home messages you can utilize to forecasting accurate quantities of food.

Topics covered in this training included:

- Financial Management
- Production Records
- Forecasting
- Menu Item Costs
- Product Screening
- Inventory Control
- Meal Equivalents
- Labor Costs

In addition, by completing the activities and networking with your peers, you have gained valuable information that will contribute to your effectiveness as a trainer. Remember, successful trainers plan objectives, practice activities, and evaluate the outcomes. This concludes today's training.

**(Activity): Post-Assessment and Evaluation**

Complete the post-assessment and the evaluation form.

**Thank You**

Thank you for your active participation and attention in the Forecasting the Procurement of Foods training.





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## Appendix

	3
<b>Standardized Recipes Sample Answer Key</b>	
<b>Lunch Production Record Missing Elements Worksheet Answer Key</b>	5
<b>Forecasting Worksheet Answer Key</b>	
<b>Purchasing Decision Worksheet Answer Key</b>	
<b>Inventory Turnover Worksheet Answer Key</b>	7
<b>Meal Equivalents Worksheet Answer Key</b>	11
<b>Per Meal Cost Worksheet Answer Key</b>	13
<b>FTE Calculations Worksheet Answer Key</b>	13
<b>Meals Per Labor Hour Worksheet Answer Key</b>	13



## Standardized Recipes Sample Answer Key

**Directions:** List the benefits of utilizing Standardized Recipes

- Promote uniform quality of menu items. All products should be the same high quality.
- Promote uniform quantity of menu items. Recipes should produce a specific designated quantity.
- Increase productivity of food preparation staff. Clarifying procedures through written instructions on recipes improves efficiency and will contribute to improved financial management.
- Increase managerial productivity. Recipes eliminate guesswork in food ordering and questions. Save money by controlling overproduction. Waste is controlled by producing only the estimated number of portions needed. Save money by controlling inventory levels. More “just-in-time” purchasing is possible.
- Simplify menu item costing. Precise calculation of serving costs is very important.
- Simplify training of production staff. Recipes with detailed procedures provide an individualized training program for new staff.
- Introduce a feeling of job satisfaction. Staff knows menu items will always be the same quality.
- Help insure the nutrient analysis of a recipe will be accurate provided the ingredients, preparation methods, and serving size remain consistent.



## Lunch Production Record Missing Elements Worksheet Answer Key

**Directions:** Review the menu. Determine if all the elements of the production record are accurate and complete. If not, identify the missing information.

**Menu:** Chicken & Cheese Fajita with Roasted Peppers and Onions, (1 oz eq chicken + ½ oz eq cheese ¼ cup veg) Pinto beans, (¼ cup) Whole Wheat Roll, (1 oz eq) Chilled Pineapple, (½ cup) Variety of Milk (1 cup)

School/Site Name: Eagles Nest Elementary  
Grade Group: **\*Answer: Not Completed**  
Planned # Students to be served: 120  
Planned # Adults to be served: 15

Date: Monday, October 7, 20xx  
Offer vs. Serve: Yes No **\*Answer: Not Completed**  
Actual # Students Served: 118  
Actual # Adults Served: **\*Answer: Not Completed**

Component/Item	Recipe or Product #	Planned # Servings	Planned Portion Size	Total Planned Quantity	Actual # Servings	Actual Quantity Used	Leftovers
<b>Milk</b>							
1% plain		70	8 oz.	70	70	70	0
Fat-free, chocolate		65	8 oz.	65	62	62	3
<b>Meat/Meat Alternate</b>							
Chicken & Cheese Fajita w/ Roasted Peppers and Onions (1 oz eq chicken + ½ oz eq cheese)	E-6	135	2 oz.	270 oz.	130	130	5
<b>*Answer: Items for grain, vegetable subgroups, and fruit does not match menu.</b>							
<b>Grain</b>							
Whole Wheat Tortilla		135	1	135	135	130	5
<b>Vegetable Subgroups</b>							
<b>Dark Green</b>							
Spinach/Romaine	S-1	135	1 C	135 C	67.5 C	65 C	2 ½ C
<b>Red/Orange</b>							
Tomato Salsa	C-1	135	¼ C	33 ¾ C	130	32 ½ C	1 ¼ C
<b>Legumes</b>							
Black Beans	L-5	135	¼ C	33 ¾ C	130	32 ½ C	1 ¼ C
<b>Starchy</b>							
<b>Other</b>							
<b>*Answer: Missing information on peppers &amp; onions served with fajitas.</b>							
<b>Fruit</b>							
Peach Cup		135	½ C	67 ½ C	135	65	2 ½ C
Diced Pears		135	½ C	67 ½ C	135	65	2 ½ C
<b>*Answer: Actual servings do not match the actual quantity used and leftovers.</b>							
<b>Condiment/Other</b>							
Ranch Dressing	D-1	135	1 Tbsp	135	135	135	0
<b>*Answer: No condiments noted on menu.</b>							

Answers are in bold, italic font, and marked with an asterisk.





## Forecasting Worksheet Answer Key

### Scenario: Number of Servings to Prepare

**Directions:** Complete the calculations.

After reviewing the production records and ADP for the past 3 months, your estimated meal count is 750. This estimated count is increased because the school nutrition department has implemented nutrition education into the classroom and students are helping to plan healthier options. The weather is still very warm. The menu will be served on a Monday.

The estimate serving percentages for each item is as follows:

- 50% (.50) Grilled Teriyaki Chicken Breast on Whole Grain Bun
- 40% (.40) Fish Tacos with a Whole Grain Tortilla
- 10% (.10) Chef Salad with Multi Grain Roll

To calculate the number of servings needed for each menu item, multiply the estimated percentage by the estimated total meal count to determine the number of servings to prepare.

Estimated Percentage x Estimated Total Meal Count = Number of Servings to Prepare

Forecast how much of these items will be prepared to meet the estimated 750 meal count.

### Sample Forecasting Number of Servings to Prepare

Estimated Percentage	x	Estimated Total Meal Count	=	Number of Servings to Prepare
<b>750</b> <b>Meal Count</b>	<b>x</b>	<b>50%</b> <b>Chicken Breast</b>	<b>=</b>	<b>375</b> <b>Prepare</b>
<b>750</b> <b>Meal Count</b>	<b>x</b>	<b>40%</b> <b>Fish Tacos</b>	<b>=</b>	<b>300</b> <b>Prepare</b>
<b>750</b> <b>Meal Count</b>	<b>x</b>	<b>10%</b> <b>Chef Salad</b>	<b>=</b>	<b>75</b> <b>Prepare</b>

## Forecasting Worksheet Answer Key, continued

### Scenario: Extra Servings

**Directions:** Complete the calculations and answer the question(s) at the end of the activity. Whole grain-rich pasta served with turkey marinara is a popular menu item. The production record indicates to prepare 300 servings of the turkey marinara sauce and the whole grain-rich pasta. The staff determines there must be a mistakes and prepares 500 servings. You are concerned about food cost and want to illustrate the cost of over-production of the whole wheat pasta served with turkey marinara sauce.

- A serving of turkey marinara sauce cost is \$0.37 and whole grain-rich pasta is \$0.08 for a total cost of \$ 0.45.
- The menu item will be served 36 times throughout the school year.

#### Determine the Extra Servings Produced

Actual Quantity Prepared	-	Estimated Quantity	=	Extra Servings Produced
<b>500</b>		<b>300</b>		<b>200</b>
<b>Servings</b>	-	<b>Servings</b>	=	<b>Servings</b>

#### Determine Cost of Extra Servings Produced

Extra Servings Produced	x	Cost per Serving	=	Cost of Extra Servings Produced
<b>200</b>		<b>\$ 0.45</b>		<b>\$90.00</b>
<b>Servings</b>	x	<b>Cost</b>	=	<b>Extra Cost</b>

#### Total Cost of Extra Servings

Cost of Extra Servings Produced	x	Number of Times Served	=	Total Cost of Extra
<b>\$90.00</b>		<b>36</b>		<b>\$3,240.00</b>
<b>Extra Cost</b>	x	<b>Times Served</b>	=	<b>Total Cost</b>

## Forecasting Worksheet Answer Key, continued

### Scenario: Batch Cooking

Batch cooking and “just-in-time” (JIT) cooking are terms often used interchangeably. These terms refer to cooking in small quantities to maintain high quality throughout the serving period. The amount prepared at a given time should not exceed what can be served or is needed on the line in an established amount of time (15–30 minutes). Batch cooking ideally takes place continuously throughout the meal service period to guarantee quality.

**Directions:** Complete the calculations.

To ensure the highest quality product and reduce waste, batch cooking is the standard procedure in the school meals operation. The first meal service begins at 10:50 a.m., and the second meal service begins at 11:20 a.m. Each pan of vegetable pizza takes 10 minutes to cook and 5 minutes to record temperatures.

- Pizza appears on the menu 30 times throughout the school year.
- Before the employees practiced batch cooking, the production records indicated 20 individual pizzas left at the conclusion of meal service.
- After implementing batch cooking, only 3 individual pizzas are left.
- The individual cost of a pizza is \$0.79.

#### Pizza Savings

Leftover Pizza Count Before Batch Cooking	-	Leftover Pizza After Batch Cooking	=	Extra Pizzas Produced prior to Batch Cooking
<b>20</b>		<b>3</b>		<b>17</b>
<b>Extra Pizzas</b>	-	<b>Extra Pizzas</b>	=	<b>Extra Pizzas</b>

#### Total Reduced Pizza Count

Extra Pizzas Produced	x	Number of Times Served	=	Total Reduced Pizza Count
<b>17</b>		<b>30</b>		<b>510</b>
<b>Extra Pizzas</b>	x	<b>Times Served</b>	=	<b>Pizzas</b>

## Forecasting Worksheet Answer Key, continued

### Total Savings

Total Reduced Pizza Count	x	Cost per Pizza	=	Total Savings
<b>510</b>		<b>\$0.79</b>		<b>\$402.90</b>
<b>Pizzas</b>	<b>x</b>	<b>Cost</b>	<b>=</b>	<b>Savings</b>

## Forecasting Worksheet Answer Key, continued

### Scenario: Portion Control—Tilapia Garnished with Citrus Sauce

Portion control is essential for controlling and maintaining food costs. Serving portions larger than planned will negate any savings achieved through controlled purchasing and food production. Portion control is also essential to maintaining the integrity of production records, standardized recipes, and nutritional analysis. Portion control also helps teach customers about age-appropriate portion sizes.

**Directions:** Complete the calculations.

Tilapia with citrus sauce is on the menu. Each 2-oz portion is neatly placed in the steam table pan and the students can't wait to select this favorite menu item.

- The line server gives the first 250 students an additional 1-oz portion of the tilapia every time the menu item is served.
- Tilapia is on the menu 30 times throughout the school year.
- A 2-oz portion of tilapia cost \$0.46.

#### Cost of Extra Portion Tilapia Per Meal

Cost per Tilapia	x	Students	=	Cost of Extra Portion Tilapia per Meal
<b>\$0.23</b>		<b>250</b>		<b>\$57.50</b>
<b>Cost</b>	<b>x</b>	<b>Students</b>	<b>=</b>	<b>Cost</b>

#### Total Extra Cost

Cost of Extra Tilapia per Meal	x	Number of Times on the Menu During the Year	=	Cost of Extra Portion Tilapia per Meal
<b>\$57.50</b>		<b>30</b>		<b>\$1,725.00</b>
<b>Cost</b>	<b>x</b>	<b>Times</b>	<b>=</b>	<b>Extra Cost</b>



## Purchasing Decisions Answer Key

**Directions:** Complete the steps to calculate the cost of a product.

### **Scenario: Purchasing Decision: Broccoli**

For an upcoming menu, the manager is determining whether to order untrimmed fresh broccoli or trimmed fresh broccoli florets. Both products are acceptable.

#### **Broccoli, fresh, untrimmed**

- 100–½ cup EP servings will require 19.75 lb of AP product
- Cost per pound is \$1.29 lb
- Requires 60 minutes of labor before portioning into ½ cup serving size
- Labor cost \$11.70/60 minutes

#### **Cost of Broccoli, Fresh, Untrimmed**

Amount of Broccoli to Purchase	x	Cost per Pound	=	Purchase Cost of Broccoli, fresh, untrimmed
19.75 lb	x	\$1.29 per lb	=	<b>\$25.48</b> <b>Purchase Cost</b>

#### **Cost of Broccoli, Fresh, Untrimmed with Labor**

Cost of Broccoli, fresh, untrimmed	+	Labor Cost	=	Total Cost of Broccoli, fresh, untrimmed
\$25.48 Purchase Cost	+	\$11.70 per 60 Minutes	=	<b>\$37.18</b> <b>Total Cost</b>

## Purchasing Decisions Worksheet

### Answer Key, continued

#### Broccoli, fresh, florets, trimmed, ready-to-use

- 100–½ cup EP servings will require 7 lb of AP product
- Cost per pound is \$2.08 lb
- Requires 15 minutes of labor before portioning into ½ cup serving size.
- Labor cost \$11.70/60 minutes or \$2.93/15 minutes

#### Cost of Broccoli, Fresh, Florets, Trimmed, Ready-to-Use

Amount of Broccoli to Purchase	x	Cost per Pound	=	Purchase Cost of Broccoli, fresh, florets, trimmed
7 lb	x	\$2.08 per lb	=	<b>\$14.56</b> <b>Purchase Cost</b>

#### Cost of Broccoli, Fresh, Florets, Trimmed with Labor

Cost of Broccoli, fresh, trimmed	+	Labor Cost	=	Total Cost of Broccoli, fresh, florets, trimmed
\$14.56 Cost	+	\$2.93 per 15 Minutes	=	<b>\$17.49</b> <b>Total Cost</b>

**Which product is less expensive?**

**Answer:**

Broccoli, fresh, florets, trimmed, ready-to-use

**What are the factors to consider before deciding to purchase one product over the other?**

**Example responses**

- Labor cost
- Storage space



## Inventory Turnover Worksheet Answer Key

**Directions:** Complete the calculations.

April Purchases

<u>Company</u>	<u>Purchase Foods</u>
XYZ Foods	\$20,000.00
ABC Dairy	\$ 3,000.00
GH Bakery	\$ 2,000.00
USDA Foods Received Value	\$ 5,000.00

- Add the XYZ Foods, ABC Dairy, and GH Bakery purchase to determine the Total Purchased Foods.
- Add the Total Purchased Foods and the USDA Foods Value Received to determine the Value of April Foods available.

### Total of Food Purchased for April

XYZ Purchases	+	ABC Dairy Purchases	+	GH Bakery Purchases	=	Purchased Foods Total
<b>\$20,000.00</b> <b>Purchases</b>	+	<b>\$ 3,000.00</b> <b>Purchases</b>	+	<b>\$ 2,000.00</b> <b>Purchases</b>	=	<b>\$25,000.00</b> <b>April</b> <b>Purchases</b>

### Value of April Foods

Purchased Foods Total	+	USDA Foods Received Value	=	Value of April Foods Total
<b>\$25,000.00</b> <b>April Purchases</b>	+	<b>\$5,000.00</b> <b>USDA Foods</b>	=	<b>\$30,000.00</b> <b>Value of April</b> <b>Foods</b>

## Inventory Turnover Worksheet Answer Key, continued

Total Value of April Foods	\$30,000.00
March Ending Inventory	\$10,000.00
April Ending Inventory	\$12,000.00

- Add the Value of April Foods to the March ending inventory and then subtract the April ending inventory to determine the April Cost of Food Used.
- Divide the April Cost of Food Used by the average of March and April inventories to determine Inventory Turnover. The average inventory is determined by dividing the combined dollar amount of the beginning inventory and ending inventory by two.

### April Cost of Food Used

Value of April Foods	+	March Inventory	-	April Inventory	=	Cost of Food Used
<b>\$30,000.00</b>		<b>\$10,000.00</b>		<b>\$12,000.00</b>		<b>\$28,000.00</b>
<b>April Total Value</b>	<b>+</b>	<b>March Inventory</b>	<b>-</b>	<b>April Inventory</b>	<b>=</b>	<b>Cost of Food Used</b>

### Average Inventory

Ending Inventory	+	Ending Inventory	÷	2	=	Average Inventory
<b>\$10,000</b>		<b>\$12,000</b>		<b>2</b>		<b>\$11,000</b>
<b>March Inventory</b>	<b>+</b>	<b>April Inventory</b>	<b>÷</b>		<b>=</b>	<b>Average Inventory</b>

### Inventory Turnover

April Cost of Food Used	÷	Average March/April Inventory	=	Inventory Turnover
<b>\$28,000.00</b>		<b>\$11,000.00</b>		<b>2.55</b>
<b>Cost of Food Used</b>	<b>÷</b>	<b>Average Inventory</b>	<b>=</b>	<b>Inventory Turnover</b>

## Meal Equivalents Worksheet Answer Key

### Scenario: Breakfast Meal Equivalents

**Directions:** Complete the calculations. It is important to recognize not all states and school districts convert adult meals to meal equivalents using the same method. For this reason, check with your State agency for guidance

For this example, a SNP served 239 students reimbursable breakfasts. For this activity please round to the next whole number and use the following as a conversion factor.

- 1 lunch = 1 lunch meal equivalent
- 0.67 Conversion Factor = (3 breakfasts for every 2 lunches or  $2 \div 3 = 0.67$ )
- 3 snacks = 1 lunch (1 divided by 3 = 0.33)
- Nonprogram food sales = Revenue from food sales  $\div$  (Current free lunch reimbursement + current USDA Foods value/lunch)

### Breakfast Meal Equivalents

Total Number of Breakfasts Served	x	Breakfast Conversion Factor	=	Meal Equivalents
<b>239</b>		<b>0.67</b>		<b>160</b>
<b>Breakfast Served</b>	<b>x</b>	<b>Conversion Factor</b>	<b>=</b>	<b>Meal Equivalents</b>

Note: Round Meal Equivalents Other Foods to nearest whole number.

## Meal Equivalents Worksheet Answer Key, continued

### Scenario: After School Snacks

**Directions:** Complete the calculations. It is important to recognize not all states and school districts convert adult meals to meal equivalents using the same method. For this reason, check with your State agency for guidance

Afterschool snacks give children a nutritional boost and draw them into supervised activities that are safe, fun, and filled with learning opportunities. Using this equivalency, snacks can be converted to meal equivalents.

#### Conversion Factor

For this example, the SNP served 450 reimbursable afterschool snacks. For this activity please round to the next whole number and use the following as a conversion factor.

- 1 lunch = 1 lunch meal equivalent
- 0.67 Conversion Factor = (3 breakfasts for every 2 lunches or  $2 \div 3 = 0.67$ )
- 3 snacks = 1 lunch (1 divided by 3 = 0.33)
- Nonprogram food sales = Revenue from food sales  $\div$  (Current free lunch reimbursement + current USDA Foods value/lunch)

#### Calculating Meal Equivalents for Afterschool Snacks

Number of Snacks Served	x	Afterschool Snack Conversion Factor	=	Meal Equivalents
<b>450</b> <b>Snacks Served</b>	<b>x</b>	<b>0.33</b> <b>Conversion</b> <b>Factor</b>	<b>=</b>	<b>149</b> <b>Meal</b> <b>Equivalents</b>

Note: Round Meal Equivalents Other Foods to nearest whole number.

## Meal Equivalents Worksheet Answer Key, continued

### Scenario: NonProgram Food Sales

**Directions:** Complete the calculations. It is important to recognize not all states and school districts convert adult meals to meal equivalents using the same method. For this reason, check with your State agency for guidance.

Nonprogram food sales are all foods and beverages sold in the school nutrition operation other than reimbursable meals. Examples of nonprogram foods are a la carte, second student meals, and special function meals. Meal equivalent calculations for all nonprogram food sales are based on the annual federal reimbursement rate for students eligible for free lunch plus the entitlement USDA Foods value. The revenue from nonprogram food sales can be converted to meal equivalents.

- The school nutrition operation sold nonprogram food items on a given day that totaled \$434.00 in revenue
- SY 2016-2017 NSLP \$ 3.22 (Free Lunch Reimbursement plus 6 cents)
- SY 2016-2017 USDA (Entitlement) Foods Value \$0.23
- Convert the revenue from nonprogram food sales to meal equivalents.

### Calculating Meal Equivalents for Nonprogram Food Sales

<b>3.22</b> Free Lunch	+	<b>\$0.23</b> USDA Food Value	=	<b>\$3.45</b> Revenue
<b>\$434.00</b> Nonprogram Food Sales	÷	<b>\$3.45</b> Revenue	=	<b>126</b> Meal Equivalents Other Foods

Note: Round Meal Equivalents Other Foods to nearest whole number.

## Per Meal Cost Worksheet Answer Key

### **Scenario: Determine the Expenditures for Period.**

**Directions:** Complete the calculations. It is important to recognize not all states and school districts calculate per meal cost using the same method. For this reason, check with your State agency for guidance.

#### **Calculating Per Meal Cost**

Meal cost is determined by dividing total expenditures by total meal equivalents. Meal cost can be calculated for any accounting period the school nutrition manager wishes to analyze. The example below provides an explanation of the total process for calculating the cost to produce a meal for a given period of time. To calculate Per Meal Cost

- Determine the expenditures.
- Calculate all meals and meal equivalents.
- Total all meal equivalents and lunches together.
- Divide total expenditures by total meal equivalents.

Calculations made at the school level serve as a tool for evaluating expenditures at that site. They may not necessarily reflect all costs associated with the district's school nutrition operation. Expenses may go beyond food and labor. Some other allowable school nutrition expenses include: supplies, equipment, purchased services, property repair and maintenance, electricity, fuel, water, transportation (e.g., fuel and oil), professional development, and indirect costs.

## Per Meal Cost Worksheet Answer Key, continued

For this example, the staff gathered all the daily cost information, including the following:

■ Food Costs	\$ 1,089.00
■ Labor Costs	\$ 1,189.50
■ Professional Development (PD) Costs	\$ 18.00
■ General Supplies Cost	\$ 80.20
■ Indirect Costs	\$ 217.15

### Determine the Expenditures for Period

Food Costs	+	Labor Cost	+	PD Cost	+	General Supplies	+	Overhead Costs	=	Total Expenditures
\$1,089.00		\$1,189.50		\$18.00		\$80.20		\$217.15		\$2,593.85
<b>Food Cost</b>	<b>+</b>	<b>Labor Cost</b>	<b>+</b>	<b>Professional Development Cost</b>	<b>+</b>	<b>General Supplies</b>	<b>+</b>	<b>Indirect Cost</b>	<b>=</b>	<b>Total Expenditures</b>

### Scenario:

#### Calculate all Meals and Meal Equivalents.

After the total expenditures were calculated, the number of meal equivalents for each type of service was determined.

In ABC Elementary School, school nutrition staff members concerned about plate costs in their school decided to analyze meal costs on a daily basis.

On this particular day, the school nutrition operation served

- 700 student lunches
- \$93.00 in adult lunch sales
- 239 breakfasts
- 54 snacks in the afterschool care program

## Per Meal Cost Worksheet Answer Key, continued

### Conversion Factor

For this example, a school nutrition program served 358 student reimbursable breakfasts. For this activity please round to the next whole number and use the following as a conversion factor.

- 1 lunch = 1 lunch meal equivalent
- 0.67 Conversion Factor = (3 breakfasts for every 2 lunches or  $2 \div 3 = 0.67$ )
- 3 snacks = 1 lunch (1 divided by 3 = 0.33)
- Nonprogram food sales = Revenue from food sales  $\div$  (Current free lunch reimbursement + current USDA Foods value/lunch)

### Lunch Meal Equivalents

Total Number of Lunches Served	x	Lunch Conversion Factor	=	Meal Equivalents
<b>700</b>		<b>1.00</b>		<b>700</b>
<b>Lunch Served</b>	<b>x</b>	<b>Conversion Factor</b>	<b>=</b>	<b>MEs Lunches</b>



## Per Meal Cost Worksheet Answer Key, continued

### Nonprogram Food Sales Meal Equivalents Adult Sales (MEs)

Nonprogram Foods	÷	(Free Lunch Reimbursement	+	USDA Foods Value)	=	Meal Equivalents
<b>\$93.00</b>		<b>(\$3.22</b>		<b>\$0.23)</b>		<b>27</b>
<b>Adult Lunch Sales</b>	÷	<b>Free Lunch</b>	+	<b>USDA Foods Value</b>	=	<b>MEs Adult Sale</b>

### Breakfast Meal Equivalents

Total Number of Breakfasts Served	x	Breakfast Conversion Factor	=	Meal Equivalents
<b>239</b>		<b>0.67</b>		<b>160</b>
<b>Breakfast Served</b>	x	<b>Conversion Factor</b>	=	<b>MEs Breakfast</b>

### Afterschool Snacks Meal Equivalents (MEs)

Number of Snacks Served	x	Afterschool Snack Conversion Factor	=	Meal Equivalents
<b>54</b>		<b>0.33</b>		<b>18</b>
<b>Snacks Served</b>	x	<b>Conversion Factor</b>	=	<b>MEs Afterschool Snacks</b>

## Per Meal Cost Worksheet Answer Key, continued

### Total Meal Equivalents (MEs)

Lunch	+	Adult Lunch Sale	+	Breakfast	+	After School Snacks	=	Total Meal Equivalents
<b>700 MEs Lunches</b>	+	<b>27 MEs Adult Sales</b>	+	<b>160 MEs Breakfast</b>	+	<b>18 MEs Afterschool Snacks</b>	=	<b>905 Total MEs</b>

### Scenario: Calculating Per Plate Meal Cost

Based on the staff's daily cost information, the manager determined that expenditures totaled \$2593.85 and the total meal equivalents totaled 908 for the period. To find the per meal cost, divide the total expenditures for the period by the total meal equivalents. This tells the school nutrition manager the cost of producing a meal equivalent on a per-plate basis for the period of time being analyzed.

### Per Meal Cost

Total Expenditures	÷	Total Meal Equivalents	=	Meal Cost
<b>\$2, 593.85 Total Expenditures</b>	÷	<b>905 Total MEs</b>	=	<b>\$2.87 Meal Cost</b>

## FTE Calculations Worksheet Answer Key

**Directions:** Complete the calculations.

You have been asked to determine the total FTEs for your school nutrition operation. You have various work schedules for your employees. For this example, full-time equivalents are calculated using 40 hours a week as the standard. There are currently 12 employees on staff:

- Group A: 3 employees work 8 hours per day, 5 days per week
- Group B: 3 employees work 4 hours per day, 5 days per week
- Group C: 3 employees work 6 hours per day, 3 days per week
- Group D: 3 employees work 2 hours per day, 5 days per week

### Scenario: Total Hours Worked Per Day

Number of Employees	x	Hours Worked per Day	=	Total Hours per Day
<b>3</b>		<b>8</b>		<b>24</b>
<b>Group A</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group A</b>
<b>3</b>		<b>4</b>		<b>12</b>
<b>Group B</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group B</b>
<b>3</b>		<b>6</b>		<b>18</b>
<b>Group C</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group C</b>
<b>3</b>		<b>2</b>		<b>6</b>
<b>Group D</b>	<b>x</b>	<b>Hours/Day</b>	<b>=</b>	<b>Total Hours/Day Group D</b>

## FTE Calculations Worksheet Answer Key, continued

### Scenario: Total Hours Worked Per Week

Total Hours per Day	x	Number of Days per Week	=	Total Hours Worked per Week
<b>24</b>		<b>5</b>		<b>120</b>
<b>Total Hours/Day Group A</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group A</b>
<b>12</b>		<b>5</b>		<b>60</b>
<b>Total Hours/Day Group B</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group B</b>
<b>18</b>		<b>3</b>		<b>54</b>
<b>Total Hours/Day Group C</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group C</b>
<b>6</b>		<b>5</b>		<b>30</b>
<b>Total Hours/Day Group D</b>	<b>x</b>	<b>Days/Week</b>	<b>=</b>	<b>Hours Worked/Week Group D</b>

## FTE Calculations Worksheet Answer Key, continued

### Scenario: Total Hours Worked Per Week (All Groups)

Group A	+	Group B	+	Group C	+	Group D	=	Total Hours Worked /Week
<b>120</b> Hours Worked/Week Group A	+	<b>60</b> Hours Worked/Week Group B	+	<b>54</b> Hours Worked/Week Group C	+	<b>30</b> Hours Worked/Week Group D	=	<b>264</b> Total Hours Worked Week (All Groups)

### Scenario: Total FTEs

Total Hours Worked per/Week	÷	Hours FTE	=	Total FTEs
<b>264</b> Total Hours Worked /Week All Groups	÷	<b>40</b> Hours FTE	=	<b>6.6</b> Total FTEs

## Meals Per Labor Hour Worksheet Answer Key

### Scenario: ABC Elementary

**Directions:** Complete the calculation.

The school nutrition manager at ABC Elementary School and the district school nutrition administrator agreed that there is a need to increase productivity at the SNP site. The school nutrition manager reviewed the following information to analyze the existing productivity index.

- ABC Elementary School set a goal of 17 MPLH based on the type of meal service offered.
- Based on lunch, breakfast, snacks, and other sales, your calculations indicate 667 Meal Equivalents for this day.
- For this example, the current productive labor is 49 hours for a day, which includes all school nutrition employees and the manager.
- Round your answers to the nearest whole number.

### Desired Meal Per Labor Hours

<b>ME</b>	<b>÷</b>	<b>Desired MPLH</b>	<b>=</b>	<b>Desired Total Number of Labor Hours Day</b>
<b>667</b>		<b>17</b>		<b>39</b>
<b>Total ME Day</b>	<b>÷</b>	<b>Total Labor Hours Day</b>	<b>=</b>	<b>Desired Total Number of Labor Hours Day</b>

## Meals Per Labor Hour Worksheet Answer Key, continued

### Labor Hours to Reduce

Current Labor Hours Day	-	Desired MPLH	=	Labor Hours to Reduce
<b>49</b>		<b>39</b>		<b>10</b>
<b>Current Labor Hours Day</b>	<b>-</b>	<b>Desired Total Number of Labor Hours Day</b>	<b>=</b>	<b>Labor Hours to Reduce</b>









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