



Inventory Management and Tracking

A Course for School Nutrition Directors
PARTICIPANT'S WORKBOOK



National Food Service Management Institute
The University of Mississippi

Item Number ET109-12

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National Food Service Management Institute

The University of Mississippi

Building the Future Through Child Nutrition

The National Food Service Management Institute was authorized by Congress in 1989 and established in 1990 at The University of Mississippi in Oxford and is operated in collaboration with The University of Southern Mississippi in Hattiesburg. The Institute operates under a grant agreement with the United States Department of Agriculture, Food and Nutrition Service.

PURPOSE

The purpose of the National Food Service Management Institute is to improve the operation of child nutrition programs through research, education and training, and information dissemination.

MISSION

The mission of the National Food Service Management Institute is to provide information and services that promote the continuous improvement of child nutrition programs.

VISION

The vision of the National Food Service Management Institute is to be the leader in providing education, research, and resources to promote excellence in child nutrition programs.

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ACTIVITY 2 – Efficient Supply Chains

Directions

1. Write down your assigned product: _____
2. Draw the supply chain (some potential members listed below for your convenience) for the selected product.
 - a. Product flow
 - b. Information flow
3. List and discuss how your inventory management is affected by each of the supply chain partners. What affect might this have on your quality and cost?
4. List and discuss how your practices may affect the inventory management of various supply chain partners. What affect might this have on quality and cost?

1. Grower
2. Rancher
3. Transporter
4. Packer
5. USDA - FNS
6. USDA - FSIS
7. USDA - AMS
8. USDA - FSA
9. HHS - FDA
10. Slaughter House
11. Mills
12. Manufacturer
13. Packaging Company
14. Redistributor
15. Distributor
16. State Warehouse
17. State agency
18. Broker
19. Purchasing Coop
20. Leased Warehouse
21. FS Office
22. District Warehouse
23. Central Kitchen
24. Prep School
25. Satellite School
26. Day Care
27. Private School

ACTIVITY 3 – Efficient Internal Supply Chain

Directions

1. Draw the supply chain for your school district for both commercial and USDA canned fruit (some potential members listed below for your convenience). Include these three links. Create two groups. One group does commercial and the other group handles USDA, then compare results.
 - a. Product flow
 - b. Information flow
 - c. Money flow
2. List and discuss how your school site inventory management is affected by each of the internal supply chain partners. What affect might this have on product quality and cost?
3. List and discuss how practices of the school site may affect the inventory management of various internal supply chain partners. What affect might this have on quality and cost?
 1. Leased Warehouse
 2. FS Office
 3. District Accounting
 4. District Purchasing
 5. District Warehouse
 6. Central Kitchen
 7. Base Kitchen
 8. Prep School
 9. Cooler Storage
 10. Freezer Storage
 11. Dry Storage
 12. Satellite School
 13. Day Care
 14. Private School

ACTIVITY 4 – What’s on Your Case? Interpreting Food Labels

Directions

1. Look at the various food packages shown in the slides. Check the columns for visible information needed for traceability. The first slide is shown as an example.
2. On the lines below the table, indicate what could be done to capture the missing information.

Slide	Product Name	Product Number or GTIN	Lot or Batch Number	Delivery Date	Brand or Manufacturer	Delivered From
1	Celery	√	√			
2	Red Peppers					
3	Apples					
4	Potato					
5	Potato Salad					
6	Juice					
7	Bologna					
8	Beef Patty					
9	Strudel					
10	Chicken					
11	Chocolate					
12	Cup					

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

ACTIVITY 5 – Critical Tracking Events in the Internal Supply Chain

Directions

1. Draw the flow of product in your district for a USDA Food - frozen cherries start with receiving at the first point of entry (e.g., warehouse) and list every process the cherries pass through such as storage or preparation.
2. On the diagram, indicate with a CTE (critical tracking event) each place where information should be recorded in order to ensure traceability.

ACTIVITY 6 – The Great Menu Debate

(There is no activity sheet for this activity).

The Great Menu Debate lets participants debate the benefits of a 3-week cycle menu compared to a menu that changes each month.

ACTIVITY 7 – Case Studies in Inventory Management

Directions

One of the following scenarios will be assigned to your table. After reading the scenario, discuss the following questions. Appoint a spokesperson to share answers with the group.

1. What school nutrition program goals (quality, customer service, efficiency, financial, quantity on hand, and food safety) are impacted in this scenario?
2. How does the scenario relate to inventory management?
3. Does the solution fix the problem or potentially make it worse?

Scenarios

1. Swift High School has 1200 students who are scheduled to eat in four 30-minute lunch periods. The lines were running out of tacos during the last period. To solve the problem, the cooks “ration” the tacos so that only so many servings are put on the line for each lunch period. When the taco “quota” is gone for each lunch period, the cook would substitute a popular item, such as pizza.
2. Warren Elementary School has very little storage space. The distributor delivers food every Tuesday, right before lunch is served. In order to help the manager, a custodian accepts the delivery and signs the delivery ticket. He has the delivery driver put the frozen and cold foods directly into the freezers and refrigerators. The dry goods are left in the hallway until after service. The manager checks in the order after lunch service has been completed. It appears that the delivery invoice matches the order so she signs the invoice and sends it in for payment.
3. Crown Middle School has a student named Tommy with a peanut allergy. Information about the allergy has been added to the point-of-sale system warning the cashier about the allergy and that the student’s tray should be checked. Tommy selected the chef salad with French dressing for his lunch today. The cashier checked the tray and did not see any peanut products. The distributor was out of canola oil this week and substituted peanut oil for the same price. The salad cook used the oil to make a French dressing. She carefully recorded the amount of oil she used on the production record and referenced the recipes she used.
4. The manager at Blue Bay High School is known for helping other managers in the district. The manager at East Elementary is struggling to forecast correctly and has not ordered enough pizza to serve all the students. The manager at Blue Bay offers to share 3 cases of pizza saying “I always keep extra on hand for emergencies”. She also offers to not tell the supervisor that she shared the food so that the new manager does not get into trouble for improper ordering.

ACTIVITY 8 – Calculating Food Cost and Inventory Turnover

Anderson School District has two middle schools, Anderson Middle and Northwest Middle. The district director plans a 3-week cycle menu for all middle schools. Each school gets a weekly delivery by a distributor of both commercial and USDA Foods. They receive twice-a-week deliveries for bread and milk.

On February 28th, the last serving day of the month, the managers in both schools took a physical inventory of their commercial and USDA food supplies. The value of Anderson’s total inventory was \$5,525 and Northwest’s total inventory was \$6,985.

During March, Anderson purchased \$8,900 in food and received \$ 750 in USDA Foods. Northwest purchased \$4,300 in food and received only \$250 in USDA Foods. There were 23 serving days during the month. On March 31st both managers took another physical inventory. Anderson’s total inventory was \$4,440 and Northwest’s total was \$7,120.

Directions

- Using the information in the scenario, calculate the food cost for Anderson Middle School and Northwest Middle School.
- How many days worth of inventory do both schools have on hand as of March 31st?
- How many times did the inventory turnover in each school?
- Answer the questions on the following page.

Anderson Middle	Northwest Middle
<p>Step 1</p> <p>Beginning Inventory \$ _____</p> <p>+ Food Purchased/USDA \$ _____</p> <p>- Ending Inventory \$ _____</p> <hr style="width: 80%; margin-left: 0;"/> <p>= Food Cost \$ _____</p>	<p>Step 1</p> <p>Beginning Inventory \$ _____</p> <p>+ Food Purchased/USDA \$ _____</p> <p>- Ending Inventory \$ _____</p> <hr style="width: 80%; margin-left: 0;"/> <p>= Food Cost \$ _____</p>
<p>Step 2</p> <p>Food Cost \$ _____ ÷ ____ Serving Days</p> <p>= Daily Food Cost \$ _____</p> <p>Step 3</p> <p>Ending Inventory \$ _____</p> <p>÷ Daily Food Cost \$ _____</p> <p>= Days of Inventory on Hand _____</p>	<p>Step 2</p> <p>Food Cost \$ _____ ÷ ____ Serving Days</p> <p>= Daily Food Cost \$ _____</p> <p>Step 3</p> <p>Ending Inventory \$ _____</p> <p>÷ Daily Food Cost \$ _____</p> <p>= Days of Inventory on Hand _____</p>
<p>Step 4</p> <p># serving days _____</p> <p>÷ days of inventory on hand _____</p> <p>= Inventory turnover _____</p>	<p>Step 4</p> <p># serving days _____</p> <p>÷ days of inventory on hand _____</p> <p>= Inventory turnover _____</p>

ACTIVITY 8 – Calculating Food Cost and Inventory Turnover, Continued

1. Using the food cost in Step 1, which school has the best food cost % (food cost divided by revenue)?
 - a. Anderson
 - b. Northwest
 - c. Not enough information to determine
 - d. Both had similar food costs

2. Does Anderson have an acceptable “days of inventory on hand”?
 - a. Yes
 - b. No
 - c. Not enough information to tell

3. Which site has the best “days of inventory on hand”?
 - a. Anderson
 - b. Northwest
 - c. Not enough information to tell
 - d. Both had similar “days of inventory on hand”

4. Does Northwest have an acceptable number of inventory turns?
 - a. Yes
 - b. No
 - c. Not enough information to tell

5. Which site has the best inventory turnover rate?
 - a. Anderson
 - b. Northwest
 - c. Not enough information to tell
 - d. Both had similar “inventory turnover rates”

ACTIVITY 9 – Writing Standard Operating Procedures

Directions

1. Read the SOP below and add or revise any steps that would improve the traceability of products.
2. Place a star by the Critical Tracking Events (CTE).

Taking a Physical Inventory – School Site

(Sample SOP)

PURPOSE: To determine the value of commercial foods, USDA Foods, and supplies on hand for use in determining food and supply costs. This information is also used for developing school district financial reports such as a balance sheet.

SCOPE: This procedure applies to site foodservice employees responsible for inventory control.

KEY WORDS: Inventory control, food cost, tracking

INSTRUCTIONS:

1. Follow State or local health department requirements.
2. Take inventory after all products have been received or issued for the day.
3. Count each product accurately.
4. Assign two employees to take a physical count of food and supplies in storage on the last serving day of the month or at the end of the accounting period.
5. Count all items in storage or received and invoiced during the month (or at the end of accounting period).
6. Instruct one employee to say the product name and quantity.
7. Instruct the second employee to record the quantity of each item counted on an inventory sheet.
8. Count the inventory in the top left-hand side of the storage area moving to the bottom right-hand side.
9. Note if a product is placed in the wrong location or in a position that compromises food safety e.g., chemical over food product. Do not move items to a different location until after the inventory is completed.
10. Count all full cases and unopened sub-units such as cans and packages. Estimate the amount in open sub-units such as sugar, flour or spices in $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$ unit.
11. Inventory products ordered by weight by the same weight units as ordered.
12. Count and write-in leftovers noting the use-by date on the inventory sheets.

Physical Inventory, continued

(Sample SOP)

THE UNIT SUPERVISOR WILL:

1. Train foodservice employees on using the procedures in this SOP. Train different employees to take inventory, receive products, and issue food items.
2. Provide a pre-printed inventory worksheet without expected quantities of each item. List items on the inventory worksheet in the same order as products are stored on shelves starting at the top left and working toward the bottom right hand corner in each storage area.

MONITORING:

Foodservice manager will utilize the Site Inventory Management and Tracking Checklist each month. (Note: This document may be found in Chapter 6 of the *Inventory Tracking Reference Guide*.)

CORRECTIVE ACTION:

Use this SOP to retrain any foodservice employee found not following the standard operating procedures.

VERIFICATION AND RECORD KEEPING

1. Foodservice employees will record the name and quantity count of the food items on the Physical Inventory Worksheet.
2. The foodservice manager will verify that appropriate corrective actions are being taken by reviewing, initialing, and dating the inventory control section of the Site Inventory Control Checklist.
3. Update perpetual inventory record with physical inventory count.

DATE IMPLEMENTED: _____ BY: _____

DATE REVIEWED: _____ BY: _____

DATE REVISED: _____ BY: _____

ACTIVITY 10 – Media Frenzy

Directions

1. Choose a different role for each person in the group from the following list: foodservice director, school nurse, school administrator (e.g., superintendent, business manager), public health official, school district media liaison, distributor salesperson.
2. Read the emergency scenario.
3. Write down questions related to the emergency that the media may ask related to your role. (5 min.)
4. As a group, draft a press release containing important information about the emergency. (5 min.)
5. Stage a media briefing for the other groups. Have the district media liaison read the press release drafted by your group. The rest of the class will take on the role of the media asking questions about the incident to any of the team members. (10 min.)
6. After the media briefing, list the inventory management and tracking best practices that would provide the best information in the event of a food-related emergency. (10 min.)

Scenario

James Jones, the School Nutrition Director from Anderson School District just spoke with Dottie Davis, his distributor's sales representative. Canned potatoes sold by the distributor have been recalled due to potential contamination by *Clostridium botulinum*. *Clostridium botulinum* can be fatal unless an anti-toxin is administered promptly. The onset of this disease is between two hours to six days. Dottie provided the GTIN and lot numbers for the potatoes being recalled. Purchasing records indicate that Anderson Schools received 20 cases of the recalled product on September 10 and another 20 cases on October 12. Parsley potatoes were on the menu 2 days ago. Notice of the recall also was provided to local news media because several commercial products were potentially affected. So far 30 cases of the disease have been reported nationally including one fatality. James notified his supervisor about the recall and the potential severity. The superintendent has called a meeting in 1 hour to address the issue and prepare a statement for the local media.

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