Inventory Management and Tracking

A Course for School Nutrition Managers and Staff

Participant's Workbook

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USDA

Inventory Management and Tracking
2nd Edition

Participant's Workbook

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INSTITUTE OF *child nutrition*
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Key Area 2: Operations
USDA Professional Standards: 2510 & 2520

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Institute of Child Nutrition
The University of Mississippi

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PURPOSE

Improve the operation of child nutrition programs through research, education and training, and information dissemination.

VISION

Lead the nation in providing research, education, and resources to promote excellence in child nutrition programs.

MISSION

Provide relevant research-based information and services that advance the continuous improvement of child nutrition programs.

Disclaimer

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Introduction

Welcome to the Institute of Child Nutrition's (ICN) *Inventory Management and Tracking.* The purpose of this training is to help you gain a better understanding of the concepts and principles of inventory management as they relate to child nutrition programs and the importance of keeping accurate inventory records.

Today we are going to talk about inventory management and tracking. There are several tools you can use to help you with inventory management and controlling inventory costs:
- receiving and storage,
- standard operating procedures,
- accurate recordkeeping and tracking
- cycle menus,
- production records, and
- forecasting.

Inventory management has long been considered a critical component of a well-managed child nutrition program. Controlling costs is the focus of inventory management practices.

Effective inventory control begins long before products are purchased. Menu planning and recipe development are the first two steps in inventory management. The menu planner should utilize a minimum number of products while at the same time provide enough variety to maximize customer satisfaction and good nutrition. Procuring, forecasting, ordering, and receiving ensure that the right foods in the correct quantities are received just in time for production. Good storage practices keep food secure and minimize waste. Effective and efficient production and service practices ensure that customers consistently receive the foods they want safe, freshly prepared, and served in correct portions.

Traceability or the ability to track food items back to their source may be a new concept for the staff in child nutrition programs. It includes recording delivery dates, delivery agent information, quantity, product codes, and lot numbers for items received by the school. Traceability also includes the disposition of the product, such as the date served or disposed of as a minimum best practice.

Inventory management is more complex than just having food on hand. In this training, we will discuss
- receiving and storage of food and supplies,
- three types of storage,
- recordkeeping and tracking,
- controlling inventory cost, and
- forecasting.

In the introduction, you will find a list of key terms and definitions to explain any terms that are not familiar to you.

Functional Areas and Competencies

School Nutrition Directors

Functional Area 8: Procurement and Inventory Management

Competency 8.2: Establishes operational procedures to effectively manage receiving and inventory systems.

Knowledge Statements
- Knows fundamentals of effective receiving procedures.
- Knows methods for effective inventory control.
- Knows methods for effective implementation of a central warehouse system, when appropriate.

Source: *Competencies, Knowledge, and Skills for District-Level School Nutrition Professionals in the 21st Century* (2009) available on the ICN website: https://theicn.org/icn-resources-a-z/CKS-district-school-professionals

School Nutrition Managers

Functional Area 5: Procurement and Inventory Management

Competency 5.1: Utilizes forecasting methods to ensure adequate quantities of food are purchased.

Knowledge Statement
- Knows forecasting methods to order accurate amounts of food and supplies.

Competency 5.2: Conducts procurement procedures that follow Federal, State, and local school purchasing guidelines.

Knowledge Statements
- Knows the importance of checking inventory before ordering.
- Knows the managers' responsibilities for ordering, receiving, storing, and conducting inventory of products for the school nutrition program.

Competency 5.4: Follows procedures for receiving food and supplies.

Knowledge Statement
- Knows policies and procedures for receiving and accepting products delivered to the school nutrition program.

Competency 5.5: Follows procedures to ensure that appropriate storage and issuing techniques are implemented.

Knowledge Statements
- Knows the importance of secure, efficient, and safe storage areas.

- Knows procedures for securing storage areas from theft and food tampering.
- Knows district standard operating procedures (SOPs) for dating and using products to reflect first-in, first-out (FIFO).
- Knows the importance of maintaining an accurate record of products used.
- Knows how and when to delegate responsibility for inventorying to staff members.
- Knows the importance of rotating stock when issuing food from the storage areas.
- Knows effective inventory procedures for managing the flow of products from storage to the serving line.
- Knows physical and perpetual methods of recording food products and supplies in inventory and knows when to use each method.

Source: *Competencies, Knowledge, and Skills for School Nutrition Managers* (2018) available on the ICN website: https://theicn.org/icn-resources-a-z/ckssnmanagers21

School Nutrition Staff

Functional Area 1: Food Production

Competency 1.2: Follow operational procedures for efficient and effective food production and service.

Knowledge Statement
- Knows importance of and procedures for maintaining an accurate inventory system.

Functional Area 4: Program Regulations and Accountability

Competency 4.2: Maintains accountability of recorded documentation for compliance with federal, State, and local regulations.

Knowledge Statement
- Knows the importance of accurate recordkeeping.

Source: *Competencies, Knowledge, and Skills of Effective School Nutrition Assistants and Technicians* available on the ICN website: https://theicn.org/icn-resources-a-z/CKS-school-nutrition-assistants

PROFESSIONAL STANDARDS

Receiving and Storage – 2500
Employee will be able to ensure proper inventory management including correct delivery and storage of inventory, and that which has been placed on hold or recalled.

2510 – Develop processes for inventory management
2520 – Apply safe and effective receiving and storage procedures

Key Area 2: Operations

Training Objectives

At the end of this training, participants will be able to accomplish the following objectives:

Lesson 1: Receiving and Storing Food and Supplies
- Describe proper procedures and best practices for receiving and storing inventory.
- Summarize the storing process for dry, refrigerator, and freezer storage.

Lesson 2: Recordkeeping and Tracking
- Explain the concept of recordkeeping and why it is important in school nutrition programs.
- Distinguish the difference between the four types of dates that may be found on product packaging.
- Identify information needed for product traceability and state when this information should be recorded.
- Describe the difference between perpetual and physical inventory methods used in the school nutrition programs.

Lesson 3: Controlling Inventory Cost
- Explain the importance of an accurate inventory system and how cycle menus impact controlling inventory cost.
- Calculate food cost, inventory turnover, and days of inventory on hand.
- Identify recordkeeping best practices for keeping accurate records and tools to maintain accuracy.

Lesson 4: Forecasting
- Recognize the importance of an accurate inventory and the impact it has on forecasting.
- Explain the impact production records have on inventory control.
- Design an inventory management plan.

Ground Rules

- **Show up on time and come prepared.** Be prompt in arriving and in returning from breaks. Come with a positive attitude.
- **Stay mentally and physically present.** Be present and stay on task. Listen attentively to others and avoid disruptive side conversations.
- **Let everyone participate.** Be patient when listening to others speak. Treat all participants with the same respect that you would want from them.
- **Listen with an open mind.** Stay open to new ways of doing things, and listen for understanding. You can respect another person's point of view without agreeing with them.
- **Think before speaking.** Seek first to understand, then to be understood. Avoid using idioms, three-letter acronyms, and phrases that can be misunderstood.
- **Attack the problem, not the person.** Respectfully challenge the idea, not the person. Honest and constructive discussions are necessary to get the best results.

Key Terms and Definitions

Key Terms	Definitions
Assets	Total inventory stored in schools
Best If Used By (or Used Before)	Indicates peak quality date – does not mean the product is unsafe or unfit to eat beyond this date
Buy American Act	Federal legislation that requires the U.S. governmental funds to be used to prefer U.S. made domestic products over foreign goods
Carrying Costs	Costs for transporting, handling, and storing inventory
Closed or Coded Dates	Packing numbers used by the manufacturer. These may be perpetual calendar dates with each day of the year given a consecutive number with January 1 coded as 001.
Critical Tracking Event (CTE)	A point when a product is moved between sites is transformed, or any point where a record is required to trace a product.
Cycle Menu	Menus that are repeated over a specific period of time. The menu is typically different each day during the cycle. At the end of the cycle, the menu is repeated. It is repeated over a specific period of time, such as 4 weeks.
Cycle Count	A physical count of a small group of randomly selected products conducted periodically. Typically used in high volume operations when a monthly physical inventory may not be practical.
First-Expired/First-Out (FEFO)	A way of dealing with perishable products or with a specified expiration date. The practice of processing those goods first that will expire first.
First-In/First-Out (FIFO)	An inventory accounting method by which the first items placed in inventory (i.e., foods and other meal service goods) are the first items used in meal preparation and production
GTIN	The Global Trade Item Number (GTIN) is a globally unique system with identification numbers for trade items, which encompasses both products and services. GTINs provide the capability to deliver unique identification worldwide.
Hazard Analysis and Critical Control Points (HACCP)	A food safety system based on principles used to identify, evaluate, and control hazards
Inventory	Food and supplies purchased for an organization but not yet used
Lot Numbers	An identification number assigned to a particular quantity or lot of material from a single manufacturer. Lot numbers can typically be found on the outside of packaging.

Key Terms	Definitions
Par (Periodic Automatic Replacement) Value	The amount of product needed to fulfill menu requirements for one ordering period plus a small amount for safety stock
Perpetual Inventory	A system used to track the receipt and use of inventory and calculate the quantity on hand. Continuous recording of all receipts and issues of products in storage, providing a balance of each item at all times.
Physical Inventory	A process where designated school nutrition staff physically count the entire inventory An actual periodic count of products in storage areas
Product Code	A common barcode used to identify packaged products
Safety Stock	A small amount of product kept on hand to accommodate an unexpected rise in customer demand or a late delivery
Sell-By	The last date products should be displayed for sale. Although the product may still be safe, the quality starts to diminish once this date passes.
Shelf Life	Length of time food may be stored before safety or quality is diminished
Shrink	Loss of product due to waste, damage, spoilage, or theft
Stockkeeping Units (SKU)	An item of stock that is completely specified as to size, flavor, color, recipe, and any other attribute (e.g., two flavors of gelatin are different SKUs).
Standard Operating Procedure (SOP)	Established or prescribed methods to be followed routinely for the performance of designated operations or in designated situations. Detailed written instructions for a process that must be followed to ensure a desired outcome.
Time and Temperature Control for Safety (TCS) Foods	Foods that need time and temperature controls to prevent them from becoming unsafe due to biological hazards
Traceability	The ability to follow (trace) a specific food from farm to table; required as part of a food safety program
Universal Product Codes (UPC)	A bar code with a 12-digit GTIN used to uniquely identify a product and the company that owns the product brand
USDA Foods	Food purchased by USDA for use in school nutrition programs
Use-By	The last date recommended by the manufacturer for consuming the product for best quality.

Lesson 1
Receiving and Storing Food and Supplies

Objective: Describe proper procedures and best practices for receiving and storing inventory.

The primary purpose of receiving is to ensure that your school nutrition program receives what was ordered in good condition. The receiving process allows you to:

- verify that you receive the correct pre-approved products in the proper quantities,
- check for food safety and freshness, and
- ensure that products are of the best quality.

Receiving is a very important function of inventory control, and its value is often overlooked. Effective receiving requires well-trained staff and the following resources:

- the list of pre-approved items, including product code or GTIN numbers;
- a copy of the invoice;
- calibrated thermometers for checking temperatures of temperature control for safety (TCS) products;
- markers or date stamp, pens, pencils, wire snips, and clipboard;
- delivery temperature recording charts;
- hand trucks, carts, or dollies to move food to storage areas;
- scales to weigh products sold by weight; and
- a copy of your standard operating procedures for receiving food and supplies.

Receiving Deliveries
(Sample SOP)

PURPOSE: To ensure that all food is received fresh and safe when it enters the school
nutrition facility and to transfer food to proper storage as quickly as possible.

SCOPE: This procedure applies to school nutrition employees who handle, prepare, or serve
food.

KEY WORDS: Cross Contamination, Temperatures, Receiving, Holding, Frozen Goods, Delivery

INSTRUCTIONS:
1. Train school nutrition employees on using the procedures in this SOP.
2. Follow State or local health department requirements.
3. Schedule deliveries to arrive at designated times during operational hours.
4. Post the delivery schedule, including the names of vendors, days and times of deliveries,
    and drivers' names.
5. Establish a rejection policy to ensure accurate, timely, consistent, and effective refusal and
    return of rejected goods.
6. Organize freezer and refrigeration space, loading docks, and store rooms before
    deliveries.
7. Gather product specification lists and purchase orders, temperature logs, calibrated
    thermometers, pens, flashlights, and clean loading carts before deliveries. Refer to the
    Using and Calibrating Thermometers SOP.
8. Keep receiving area clean and well lighted.
9. Do not touch ready-to-eat foods with bare hands.
10. Determine whether foods will be marked with the date arrival or the "use by" date and
    mark accordingly upon receipt.
11. Compare delivery invoice against products ordered and products delivered.
12••Transfer foods to their appropriate locations as quickly as possible.
13. Verify that Key Drop Deliveries are from an approved supplier, stored properly, protected
    from contamination, and presented authentically.

Receiving Deliveries, continued
(Sample SOP)

MONITORING:
1. Inspect the delivery truck when it arrives to ensure that it is clean, free of putrid odors, and organized to prevent cross-contamination. Be sure refrigerated foods are delivered on a refrigerated truck.
2. Check the interior temperature of refrigerated trucks.
3. Confirm vendor name, day and time of delivery, as well as driver's identification before accepting delivery. If driver's name is different from what is indicated on the delivery schedule, contact the vendor immediately.
4. Check frozen foods to ensure that they are all frozen solid and show no signs of thawing and refreezing, such as the presence of large ice crystals or liquids on the bottom of cartons.
5. Check the temperature of refrigerated foods.
    • For fresh meat, fish, and poultry products, insert a clean and sanitized thermometer into the center of the product to ensure a temperature of 41 °F or below. The temperature of milk should be 45 °F or below. Milk may be received at 45 °F, but must be stored at 41 °F.
    • For packaged products, insert a food thermometer between two packages being careful not to puncture the wrapper. If the temperature exceeds 41 °F, it may be necessary to take the internal temperature before accepting the product.
    • For eggs, the interior temperature of the truck should be 45 °F or below.
6. Check expiration dates of milk, eggs, and other perishable goods to ensure safety and quality.
7. Check the integrity of food packaging.
8. Check the cleanliness of crates and other shipping containers before accepting products. Reject foods that are shipped in dirty crates.

CORRECTIVE ACTION:
1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. Reject the following:
    • Frozen foods with signs of previous thawing.
    • Cans that have signs of deterioration, such as swollen sides or ends, flawed seals or seams, dents, or rust.
    • Punctured packages.
    • Foods with out-dated expiration dates.
    • Foods that are out of safe temperature zone or deemed unacceptable by the established rejection policy.

Receiving Deliveries, continued
(Sample SOP)

VERIFICATION AND RECORD KEEPING:
Record the temperature and the corrective action on the delivery invoice or on the Receiving Log. The school nutrition manager will verify that school nutrition employees are receiving products using the proper procedure by visually monitoring receiving practices during the shift and reviewing the Receiving Log at the close of each day. Receiving Logs are kept on file for a minimum of 1 year.

DATE IMPLEMENTED: _____ **BY:** _____

DATE REVIEWED: _____ **BY:** _____

DATE REVISED: _____ **BY:** _____

Source: Institute of Child Nutrition. (2018). *Receiving deliveries*. Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-procedures/

Using and Calibrating Thermometers
(Sample SOP)

PURPOSE: To prevent foodborne illness by ensuring that the appropriate type of thermometer is used to measure internal product temperatures and that thermometers used are correctly calibrated for accuracy.

SCOPE: This procedure applies to school nutrition employees who prepare, cook, and cool food.

KEY WORDS: Thermometers, Calibration

INSTRUCTIONS:
1. Train school nutrition employees on using the procedures in this SOP.
2. Follow State or local health department requirements.
3. Follow the food thermometer manufacturer's instructions for use. Use a food thermometer that measures temperatures from 0 °F (-18 °C) to 220 °F (104 °C) and is appropriate for the temperature being taken. For example:
    • Temperatures of thin products, such as hamburgers, chicken breasts, pizza, filets, nuggets, hot dogs, and sausage patties, must be taken using a thermistor or thermocouple with a thin probe.
    • Bimetallic, dial-faced stem thermometers are accurate only when measuring temperatures of thick foods. They may not be used to measure temperatures of thin foods. A dimple mark located on the stem of the thermometer indicates the maximum food thickness that can be accurately measured.
    • Use only oven-safe, bimetallic thermometers when measuring temperatures of food while cooking in an oven.
4. Have food thermometers easily accessible to school nutrition employees during all hours of operation.
5. Clean and sanitize food thermometers before each use. Refer to the Cleaning and Sanitizing Food Contact Surfaces SOP for the proper procedure to follow.
6. Store food thermometers in an area that is clean and where they are not subject to contamination.

Using and Calibrating Thermometers, continued
(Sample SOP)

MONITORING:
1. School nutrition employees will use either the ice-point method or boiling-point method to verify the accuracy of food thermometers. This is known as calibration of the thermometer.
2. To use ice-point method:
   - Insert the thermometer probe into a cup of crushed ice.
   - Add enough cold water to remove any air pockets that might remain. Allow to sit for 1 minute.
   - Allow the temperature reading to stabilize before reading temperature.
   - Temperature measurement should be 32 °F (± 2 °F) [or 0 °C (± 1 °C)]. If not, adjust according to manufacturer's instructions.
3. To use boiling-point method:
   - Immerse at least the first two inches of the probe into boiling water.
   - Allow the temperature reading to stabilize before reading temperature.
   - Reading should be 212 °F (± 2 °F) [or 100 °C (± 1 °C)]. This reading may vary at higher altitudes. If adjustment is required, follow manufacturer's instructions.
4. School nutrition employees will check the accuracy of the food thermometers:
   - At regular intervals (at least once per week, ideally daily)
   - If dropped
   - If used to measure extreme temperatures, such as in an oven
   - Whenever accuracy is in question

CORRECTIVE ACTION:
1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. For an inaccurate, bimetallic, dial-faced thermometer, adjust the temperature by turning the dial while securing the calibration nut (located just under or below the dial) with pliers or a wrench.
3. For an inaccurate, digital thermometer with a reset button, adjust the thermometer according to the manufacturer's instructions.
4. If an inaccurate thermometer cannot be adjusted on-site, discontinue using it, and follow the manufacturer's instructions for having the thermometer calibrated.
5. Retrain employees who are using or calibrating food thermometers improperly.

Using and Calibrating Thermometers, continued
(Sample SOP)

VERIFICATION AND RECORD KEEPING:

School nutrition employees will record the calibration temperature and any corrective action taken, if applicable, on the Thermometer Calibration Log each time a thermometer is calibrated. The school nutrition manager will verify that school nutrition employees are using and calibrating thermometers properly by making visual observations of the employees during the calibration process and all operating hours. The school nutrition manager will review and initial the Calibration Log daily. The Calibration Log will be kept on file a minimum of 1 year. The school nutrition manager will complete the Food Safety Checklist daily. The Food Safety Checklist is to be kept on file for a minimum of 1 year.

DATE IMPLEMENTED: _____ **BY:** _____

DATE REVIEWED: _____ **BY:** _____

DATE REVISED: _____ **BY:** _____

Source: Institute of Child Nutrition. (2018). *Using and calibrating thermometers*. Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-procedures/

Best Practices for Deliveries

- Schedule deliveries so that the child nutrition staff have time to check food items thoroughly and store products immediately.
- Deliveries should not be accepted before trained staff are available to receive them.
- Avoid deliveries during mealtimes.
- Notify vendors if deliveries are occurring at inconvenient times.
- Staff should be familiar with expected deliveries so that the receiving process can move as quickly as possible.

Things to do Before Receiving Deliverables

- Prior to receiving deliveries, ensure your storage spaces (dry, refrigerator, freezer) are organized, and there is enough space for the delivered stock.
- Check that deliveries arrive in a clean truck that is capable of maintaining food at correct temperatures and securing products from tampering.
- Identify the driver if he/she is not familiar to the receiving agent by requesting an ID and recording the driver's name on a receiving log.
- Check-in products by category. Examine and store refrigerated items first, then frozen items, and dry goods last.
- Ensure every item on the invoice is received in the proper quantities, is inspected, and is the correct product with no damage.
  - o open boxes of produce to ensure freshness and to check for wilting or spoilage
  - o carefully inspect open cartons for damaged or missing product, weigh items sold by weight
  - o check temperatures and "use by" dates of refrigerated and frozen foods,
  - o check for thawing of frozen foods
  - o ensure all products adhere to your district's Buy American policies and reject any products that do not
- Obtain a credit receipt for missing or rejected products.
- Check items that were substituted against approved substitution list.
- Once you are satisfied that the delivery is correct, or that any discrepancies are noted, sign the invoice.
- Stamp or mark all products with the receiving date.

Inventory Management Case Studies: Receiving

Instructions: Read the case study assigned to your table team, discuss it with your team, and answer the questions after the case study. Choose a spokesperson to report to the group your team's findings. Take about 5 minutes to read and discuss the assigned case study and 5 minutes for class discussion.

Case Study #1:
Warren Elementary School has very little storage space. The distributor delivers food every Tuesday, right before lunch is served. 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 freezer and refrigerator. 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 the manager signs the invoice and sends it in for payment.

1. Does this procedure follow best practices for receiving?
2. How does the case study relate to inventory management?
3. Does the solution fix the problem or potentially make it worse?
4. What could be done to improve the inventory management system?

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Case Study #2:

It is the last week of school. You have put out the last two cases of apple juice (the student's favorite). You are serving a normal breakfast. A student brings back their apple juice and states that it smells funny. You smell it, and it has fermented. You check all of the other cases of juice and find that most of them are molded, and the others do not smell good. When you checked the boxes, the label with the date of receipt on it has the date of October of the previous year.

1. Does this procedure follow best practices for receiving?
2. How does the case study relate to inventory management?
3. List possible reasons why the juice was still in the cooler.
4. Discuss ways this could have been prevented. What needs to be done to prevent it from happening again?
5. What do you need to do to complete the breakfast components? Remember, the breakfast meal must be reimbursable.

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Storage

> **Objective:** Summarize the storing process for dry, refrigerator, and freezer storage.

Storage is important to the overall operation because it links receiving and production. Proper storage maintenance, temperature control, and cleaning and sanitizing are actions to ensure the quality of stored foods. Well trained competent staff are as important for storage positions as they are for any other positions in a school nutrition program. Staff who check-in products being received, help provide security for products and establish good handling procedures.

All foods should be placed in storage as soon as possible after delivery. Nonperishable foods, canned foods, and staples should be placed in dry storage. Perishable foods must be placed in refrigerated or frozen storage promptly. A separate, locked storage area must be available for nonfood products, such as paper supplies, detergent, and cleaning products. Chemicals must not be stored in the same area as food.

Dry Storage

The dry storage area should provide food with protection from the elements, insects, rodents, and theft. Storing cleaning supplies and pesticides in a separate, locked room will prevent the chemical items from contaminating food products. Shelving must be sturdy enough to support heavy loads without sagging or collapsing.

Products should be arranged according to a plan, and every product should be assigned a definite place. Time can be saved when checking inventory if the inventory sheets are designed to match the arrangement of products on the shelves.

Food items such as canned goods, baking supplies, grains, and cereals may be held safely in dry storage areas. The following guidelines should be followed.
- Dry storage areas should be kept clean with good ventilation to control humidity and prevent the growth of mold and bacteria.
- Temperature for the dry storage area should be maintained between 50 °F and 70 °F.
- Place a thermometer on the wall in the dry storage area.
- Check and log the temperature of the storeroom daily.
- Store food 6 inches off the floor and 2 inches away from walls to allow for air circulation.
- Pallets may be used to store items such as cases of paper towels or cleaning supplies off the floor.

Store the heaviest containers near entry on lower shelves, dollies, or dunnage racks to reduce the chance of injuries when moving products (See the following diagram).

Used Infrequently
Decorations, Uniforms

Lightweight Items
Paper Trays, Light Foods

Medium-weight Items
Cans, Bottles, Jars

Cases, Racks, Boxes

Heaviest Items
Sacks, Barrels, Crates
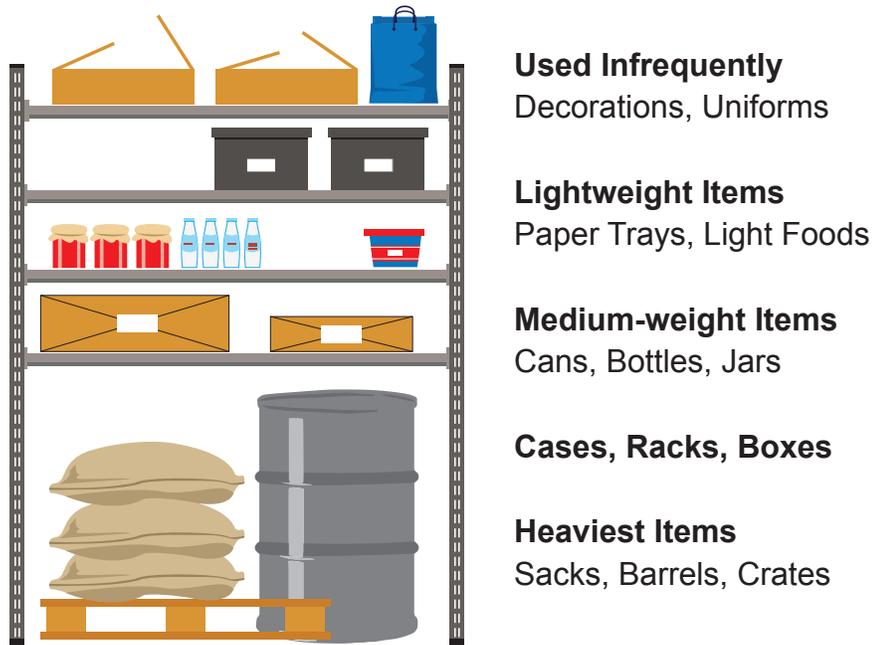
Security is critical to protect foods from theft and intentional contamination or bioterrorism. Since the terrorist actions of 9/11/2001, threats to the security of food have been re-examined. Purposeful contamination of our food and water supply has been identified as potential soft-targets that require special means of protection.

Inventory Management Case Study: Storage

Instructions: Read the case study assigned to your table team, discuss it with your team, and answer the questions following the case study. Choose a spokesperson to report to the group your team's findings. Take 5 minutes to read and discuss the assigned case study and 5 minutes for class discussion.

Case Study #1:
Your manager had to go to another school to get some more fresh fruit for lunch. While he was gone, one of your coworkers took something out of the storeroom and put it in the trunk of their car. Nothing was said to the manager when he returned. A couple of weeks later, it happened again only this time the item taken was a case of ground beef. Again, no one said anything to the manager. When you finally get the nerve to tell the manager, he does nothing about the situation. The staff member continues to take from the storeroom and refrigerator/freezer.

1. What should you have done to prevent the theft?
2. Since the manager did nothing, what should you have done at that point?
3. How long do you think someone should steal from the child nutrition program before you say something?
4. What could be done to improve the inventory management system?

_____

_____

_____

_____

_____

_____

_____

Case Study #2:

It is the last week of school. You are ready for school to be out for the summer. You are thinking about all the things you and your family have planned. At the beginning of the month, the manager assigned a list of things to be done before the last day of school to each of the staff. You have been assigned to clean the walk-in cooler and freezer and inventory the items left in both. The manager is having minor surgery and will not be at school the last week. The last day of school is finally here, and you have completed all of the items on your list except cleaning out the freezer. You took inventory of all the items in the freezer; that should be enough. Who is going to know if you cleaned it out? The manager was at the school four days after the last day of school and noticed the thermometer on the freezer registered 60 °F. She looked at the temperature log and noticed the temperature was not taken during the last week of school.

1. What should the manager do?
2. What could be done to improve the inventory management system?
3. Could this have been prevented?
4. Go through the following list of food items and decide what needs to be done by placing an X in the appropriate box.

_____

_____

_____

_____

_____

_____

_____

The inventory was taken at the end of the school year.

Quantity	Food Items	Keep & Move to Another School	Throw Away
2	5 gal bucket cherries – USDA Foods		
15	4 oz containers peaches – USDA Foods		
2 cases	frozen whole eggs		
2 qts	frozen egg whites		
3 cases	ham – USDA Foods		
2 sticks	ground turkey		
1	2" pan leftover corn, dated 4/14		
1	2" pan leftover sloppy joe meat, dated 1/31		
1 bag	Oriental blend vegetables		
2.5 cases	frozen biscuits		
2 cases	sausage patties		
4 cases	breakfast pizza		
1 case	blueberry muffins		
1 case	chopped broccoli		
1/2 case	100% fruit juice		
1 case	diced chicken – USDA Foods		
1	4" pan leftover spaghetti, no date		
1	2" pan uncovered, cooked, ground meat, no date		

• If the food item is still frozen, it can be moved to the freezer of another school. Otherwise, it must be thrown away because it is not known how long the food has been in the danger zone. The food must be labeled with the date, temperature, and the name of the school it came from.

Refrigeration/Freezer Storage

Refrigeration increases the shelf life of most food products and slows the growth of bacteria. Perishable foods should be held in refrigerated or frozen storage to preserve the quality and nutritive value immediately after delivery. Like dry storage, everything in a refrigeration/freezer unit should be stored at least 6 inches off the floor and 2 inches from the walls to provide air circulation. Pallets may be used to store items such as crates of milk or cases of 100% fruit juice off the floor. The temperature of the refrigerator should be maintained between 32 °F to 41 °F. Some food items may freeze at 32 °F (e.g., lettuce). Put these food items in the warmest section of the refrigerator. Be sure the doors have a good seal and close tightly to maintain the proper temperature. Appliance thermometers inside the refrigerator/freezer will serve as a backup in case there is a power outage.

Food must be placed in a specific order in the refrigeration unit. The order must be from the lowest cooking temperature to the highest temperature.
The order is as follows:
- Top Shelf: Ready-to-Eat. These are foods that will be served without cooking. Examples include fresh fruit, salad, fresh vegetables, cheese, and deli meats.
- Second Shelf: Foods that will be hot-held at 135 °F (57 °C). These foods are not included in the other categories. Examples include cooked fruits and vegetables.
- Third Shelf: Foods that will be cooked to 145 °F. Examples include whole cuts of beef, pork, and seafood.
- Fourth Shelf: Foods that will be cooked to 155 °F. Examples include ground beef or pork, fish nuggets or sticks, and cubed or Salisbury steak.
- Bottom Shelf: Foods that will be cooked to 165 °F. Examples include casseroles, poultry, stuffed beef, pork, seafood, and stuffed pasta.

Temperatures in all units should be checked at least twice a day (first thing in the morning and before leaving). The staff member assigned needs to check and record the temperatures at specified times as a control measure.

Refrigeration/Freezer Temperature Log

Instructions: A designated school nutrition employee will record the location or description of holding unit, date, time, air temperature, corrective action, and initials on this log. The school nutrition manager will verify that school nutrition staff have taken the required temperatures by visually monitoring food staff during the shift and reviewing, initialing, and dating this log daily. Maintain this log for a minimum of 1 year.

Location/ Unit Description	Date	Time	Temperature	Corrective Action	Food Worker Initials	Manager Initials/Date

Adapted from: Institute of Child Nutrition. (2016). *Refrigeration temperature log.* Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-logs/

The following are examples of foods that give off odors and those that absorb odors.

Food	Gives off odors	Absorbs Odors
Apple, fresh	Yes	Yes
Butter	No	Yes
Cabbage	Yes	No
Cheese	Yes	Yes
Eggs, dried	No	Yes
Eggs, fresh shell	No	Yes
Flour	No	Yes
Milk, nonfat dry	No	Yes
Milk, fresh	No	Yes
Onions	Yes	No
Peaches, fresh	Yes	No
Potatoes	Yes	No
Rice	No	Yes

Source: Foodservice Organizations: A Managerial and Systems Approach. (2017).

Lesson 1 Best Practices

Instructions: Make a list of best practices for receiving and storing products that you have learned in this lesson. List ways you can apply today's information to improve the receiving and storage procedures in your school.

_____

_____

_____

_____

_____

_____

_____

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_____

_____

Lesson 2
Recordkeeping and Tracking

> **Objective:** Explain the concept of recordkeeping and why it is important in school nutrition programs.

Items are added into inventory when deliveries are received. The delivery may be from a distributor, another building in the district, or off-site storage. Items are removed from stock when used in production, are damaged beyond use, or they are no longer wholesome or safe to consume. An emergency could happen in your district where stock is lost due to a natural disaster or a loss of power. A food emergency could also happen if items are recalled, if an illness is suspected, or food becomes contaminated either accidentally or intentionally.

Product Labeling

> **Objective:** Distinguish the difference between the four types of dates that may be found on product packaging.

Interpreting product dating and shelf life can be confusing. Four types of dates may be found on product packaging, and each type has a different meaning.

- **Sell-By** is the last date products should be displayed for sale. Although the product may still be safe, the quality starts to diminish once this date passes.
- **Best If Used By** (or Used Before) is a peak quality date. It does not mean the product is unsafe or unfit to eat beyond this date.
- **Use-By** is the last date recommended by the manufacturer for consuming the product for best quality.
- **Closed or coded dates** are packing numbers used by the manufacturer. These may be perpetual calendar dates with each day of the year given a consecutive number with January 1 coded as 001 or some variation of a date such as 20190615 representing June 15, 2019.

Common Case Markings & GTINs

COOKED BEEF PATTY MIX
CARAMEL COLOR ADDED

(no more than 20% fat, WATER, TEXTURED
Protein concentrate, caramel color) SODIUM
hydrogyzed soy and corn protein, salt) CARAMEL

"CONTAINS COMMODITIES DONATED BY THE
UNITED STATES DEPARTMENT OF
AGRICULTURE–THIS PRODUCT SHALL BE
SOLD ONLY TO ELIGIBLE RECIPIENT AGENCIES"

U.S. Inspected
and passed by
Department of
Agriculture
EST. 38

USDA
PROCESS
VERIFIED
processverified.usda.gov

Establishment Number

Manufactured by Meat Provisions Co.
Harrison, OH 45030 866-12-4567
KEEP FROZEN

CN

CN

The 2.5 oz ground beef and vegetable protein
product provides 2.00 equivalent meat/meat
alternate for the Child Nutrition Meal Pattern
Requirements. (Use of this logo and statement
authorized by the Food and Nutrition Service)

CN

NET WT. 30 LB

(01) 1 0614141052506 (10) 10036

CN

Lot Number

GTIN

Donated Commodity
Ingredients: Fresh apples, ascorbic acid (Vitamin C) and
calcium
Zero trans fat
Lot # 0110058
100 ct/2.0 oz bags Net Weight 2.5 lbs
Pack Date: 02/27/19
Use by: 03/20/19

09 FEB 2019 UT 15:31
Best By 14 Aug 2019

1 06 14141 27852 4

Global Trade Item Numbers (GTINs)

When the indicator code is 0, school operators need to be aware that the items inside the case will not have the same item reference number as the case or shipping container. For example, a school orders three cans of peaches and three cans of pears. The distributor might put the six cans in one case. Therefore, the items within the case will have different reference numbers. Extra care will need to be taken to ensure the correct item references are recorded.

GS1 ITF-14 Barcode
Inside packages will have different item reference number.
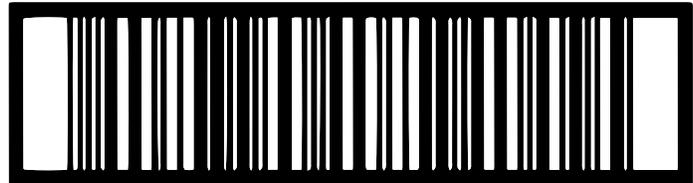
0 00 38000 03665 1

The indicator codes will be one (1) if the inner packages have the same reference number.

GS1 ITF-14 Barcode
Inside packages will have the same item reference numbers.
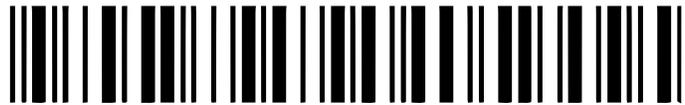
1 06 14141 00685 1

Manufacturers choosing to use a GS1-128 barcode have the option to add a lot number next to the GTIN.

(01) 1 06 14141 05250 6 (10) 10036

GS1-128 Barcode with application identifiers.
This one shows a lot number of 10036.

Source: Institute of Child Nutrition. (2012). *Inventory management and tracking reference guide.*

Traceability

Objective: Identify information needed for product traceability and state when this information should be recorded.

Traceability is the ability to track products from their original source, such as the field to every organization through which it travels until it is consumed or discarded. To effectively trace products, all organizations must have a common number for the item, an understanding of what information to collect, and a means for recording or collecting the information.

Critical tracking events (CTE) are activities or processes in the supply chain that should be documented to capture key information for each event. This information is necessary to trace product movement accurately up or down the supply chain. Dates, product name, GTINs or product codes, lot numbers, quantities, and locations should be recorded at CTEs. Technology may be used to capture information used for traceability more accurately and efficiently than manual processes.

The biggest benefit of incorporating traceability in schools is cost savings. When recalls occur, products from the same manufacturers or with the same ingredients unrelated to the recall are often pulled or destroyed, "just to be safe." Damage and costs are reduced if schools:
- are specific about which foods are involved in a recall,
- react quickly to recall notices, and
- assure the safety of related products.

Important Information

When a problem occurs with any food product, whether commercial or USDA Foods, it must be reported. If the problem is with a commercial product, report it to the distributor. However, if the problem is with USDA Foods, it must be reported to the State Distributing Agency (SDA). The SDA will determine if the problem can be resolved at the local or State level, and if not, the SDA will report the problem to USDA Food and Nutrition Service. A record of the complaint must be kept. The child nutrition staff should be prepared to provide the following information to the SDA.

- name of the food product and code number
- case codes including lot, batch, or manufacturing or use-by date
- description of the problem with special circumstances involved
- date the food was received
- quantity of product affected
- quantity and physical address of product remaining and if the remaining product is affected or not
- contract number (may be stenciled on the outer carton)
- delivery order number and notice to deliver number
- digital photographs of damaged product or foreign object, if helpful
- payee information and documentation of loss if requesting reimbursement

Types of Inventory

> **Objectives:** Describe the difference between perpetual and physical inventory methods used in the school nutrition program**.**

A physical inventory is a process where designated school nutrition staff physically count the entire inventory. A perpetual inventory system continually tracks and updates inventory records of food and supplies:

- received,
- used in production,
- moved from one location to another, and
- discarded.

Some states require schools to maintain perpetual inventory records. A perpetual manual inventory is time-consuming and, unless required by the State agency, may not be cost-effective for small operations.

Keeping a perpetual inventory is not for everyone; proper procedures must be followed. If done manually, daily check out sheets or cards need to be filled out as inventory is reduced through use. Monthly physical inventory is a best practice; however, it is not required by all school food authorities (SFAs).

Perpetual Inventory Case Studies

Instructions: Read the case studies. Discuss with your table team how you would handle the situation. Choose a spokesperson to report to the group your team's findings. The answers to the questions are subjective. Take about 5 minutes then we will discuss your conclusions

Case Study #1:
The East Middle School child nutrition manager, June, asked two of the staff, Steve and Gloria, to take inventory for her this month. It is almost time to leave. Gloria promised to be at her son's soccer game at 3:00. Gloria said that she would count while Steve wrote down the count. They finished the inventory in record time. Steve handed the inventory count to June. The next day June was working on the weekly food order to be placed on Monday. According to the inventory count she received from Steve, there are four cases of ground beef. June's perpetual inventory indicated that there were only 1.5 cases of ground beef. When June went to double-check the inventory, she found that there were 4 boxes of ground beef but only 1.5 sticks. The other boxes were empty. June is now wondering what other items were miscounted.

1. How would you handle this situation if you were June?
2. Discuss ways this could have been prevented.
3. What does June need to do to make sure this does not happen again?

_____

_____

_____

_____

_____

_____

Case Study #2:

Tony Roberts is a new manager at Sunnydale High School. The previous manager retired, leaving very little paperwork completed for the last two months of the school year. When going through the files in the manager's office, Tony found a menu for February, a production record for April 20, a perpetual inventory sheet from December, and an order form from the previous year. He did not find any recipes. It is three weeks before the first day of school, and Tony must place an order.

1. What would you do if you were in Tony's situation?
2. Discuss ways this could have been prevented.
3. What can you do to keep this situation from happening again?

_____

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Physical Inventory

You need to ensure you have enough products to prepare the meals and not run out of food. However, you want to keep inventory low enough to minimize spoilage, waste, shrinkage, or theft.

Excess inventory can result in increased waste from foods that are spoiled, pilfered, or wasted due to overproduction or obsolescence. When inventory is high, it is harder to keep track of what products are on hand. A high inventory requires more storage space, money is tied up, and it is harder to control waste than when inventory is kept at low levels. The same is true for both raw ingredients and finished products. The value of waste may be tracked on production records, or by maintaining a waste report.

The goal is to have all choices available to students but not have excessive amounts of leftovers. Although the concept appears simple, it requires careful planning, standardized procedures, and monitoring of food production and inventory to achieve desired results.

It is a best practice to have two people taking inventory; one to count and one to record. To maintain integrity, at least one of these people should not be involved with day-to-day storekeeping responsibilities such as receiving or issuing.

Writing Standard Operating Procedures

Instructions:
1. Read the following SOP and add or revise any steps that would improve the traceability of products. Discuss how the SOP might be improved and note changes on the form.
2. Write CTE by the Critical Tracking Events.

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 Statement of Net Position (balance sheet).

SCOPE: This procedure applies to site child nutrition staff 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 staff members 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 the accounting period.)
6. Instruct one staff member to say the product name and quantity.
7. Instruct the second staff member 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 1/4, 1/2, or 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.

THE UNIT SUPERVISOR WILL:
1. Train child nutrition staff on using the procedures in this SOP. Train different staff to take inventory, receive products, and issue food items.
2. Provide a pre-printed inventory worksheet without the 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:
Child nutrition manager will utilize the Site Inventory Management and Tracking Checklist each month. (Note: This document may be found in the Appendices.)

CORRECTIVE ACTION:
Use the SOP to retrain any child nutrition staff found not following the standard operating procedures.

VERIFICATION AND RECORD KEEPING
1. Child nutrition staff will record the name and quantity count of the food items on the Physical Inventory Worksheet.
2. The child nutrition 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 a perpetual inventory record with physical inventory count.

DATE IMPLEMENTED: _____BY:_____

DATE REVIEWED: _____BY: _____

DATE REVISED: _____BY: _____

Standard Operating Procedures

Standard operating procedures (SOPs) can help ensure consistent results in the processes that are implemented to manage inventory and improve product traceability. They should be updated or developed for inventory management and food tracking. SOPs can
- improve processes,
- improve compliance with regulations and policies,
- clarify and improve staff performance, and
- provide content for training programs.

Because the concept of tracking inventory may be new to you, updating SOPs or creating new ones will ensure that staff will consistently handle inventory in a manner that controls cost, improves productivity, and provides safe products with consistent quality.

Lesson 2 Best Practices

Instructions: Make a list of best practices for receiving and storing products that you have learned in this lesson. List ways you can apply today's information to improve the recordkeeping and tracking procedures in your school.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Lesson 3:
Controlling Inventory Cost

Objective: Explain the importance of an accurate inventory system and how cycle menus impact controlling inventory cost.

Inventory is a major asset that helps the menu planner with tasks such as menu planning and staying within budget. Therefore, maintaining accurate inventory records is a major management tool that has multiple benefits. Keeping extra inventory on hand ties up the school district's funds. Good inventory management is crucial in the school nutrition program.

To control your inventory cost, you must first control your inventory. Inventory control can be accomplished in a few steps.
- Develop a system to track and record inventory.
- Develop and implement procedures for ordering.
- Develop standard operating procedures (SOPs) for receiving deliveries.
- Determine how often and who will take inventory.
- Analyze the inventory data and identify needs for improvement.

Cycle Menus

Cycle menus are important for inventory management because they:
- different each day
- save time
- allow the menu planner to offer a variety of choices
- control food cost
- reduce storage costs
- reduce food waste
- can be seasonal (offering a different cycle each season)
- make it easier to forecast food needs
- predict the quantity of each item needed using sales and production history
- plan for a small amount of each item leftover to ensure all students have the same choices
- forecast batch cooking needs
- freeze usable leftovers to serve the next time the cycle is repeated
- record production projections and leftovers to be used on the production record for the next menu cycle immediately after completing each day's production record

Inventory Turnover and Number of Days on Hand

Inventory can make or break your program. Inventory turnover is the number of times inventory is used in a period. It can be used to determine if a school is holding too much inventory. For example, a school that receives a weekly delivery for most products should have a turnover rate of once every 7-10 days or 2-3 times a month. Some items, such as spices and seasonings, have a long shelf life, but it is important to order these items in quantities that will be used in a reasonable time. The goal of inventory management is to control food and supply costs. Inventory rate indicates a school's ability to control inventory levels.

Inventory levels are usually expressed as days of inventory or inventory turnover rate. Your director or supervisor is responsible for determining the number of days of inventory and the inventory turnover rate for your school. Check with your director or supervisor to find out the number of days of inventory you should have on hand and the recommended turnover rate for your school. Each month your director or supervisor should be able to tell you the number of days of inventory you had in stock at the end of the last month and your current turnover rate. You can use this information to evaluate your inventory levels and adjust your ordering. If the turnover rate is low and the number of days of inventory is higher than the recommended levels, it means that inventory needs to be reduced or used.

Food Cost/Usage per Meal

Objective: Calculate food cost, inventory turnover, and days of inventory on hand.

Food costs may be calculated in two ways.

1. Calculate the total food used from daily storeroom requisitions. This method may be useful when using a perpetual inventory system and provides an actual food cost associated with the day's menu.

2. Another method is using monthly inventory values and food purchases. When inventory values are used to calculate food costs, timing of monthly physical inventories should coordinate with invoice processing. Invoiced items are included in the ending inventory and the food and supplies purchased for the month.

Calculating Food Cost and Inventory Turnover Rate

Instructions: Using the information in the scenario, calculate the food cost for East Middle School and West Middle School. Work together in your table teams to determine how many days of inventory both schools have on hand as of March 31st. How many times did the inventory turnover at each school? Answer the questions that follow. You will have 5 minutes to complete the activity

Scenario:

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

On February 28, the last serving day of the month, the managers in both schools took a physical inventory of their commercial and USDA Foods. The value of East Middle School's inventory was $5,525, and West Middle School's total inventory was $6,985.

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

East Middle School	West Middle School

Step 1
  Beginning Inventory 3/1 $ _____
+ Food Purchases/USDA $ _____
- Ending Inventory 3/31 $ _____
 	
= Food Cost $ _____
	Step 1
	  Beginning Inventory 3/1 $ _____
	+ Food Purchases/USDA $ _____
	- Ending Inventory 3/31 $ _____
	
	= Food Cost $ _____

Step 2
  Food Cost $ _____ ÷ 23 Serving Days
 	
= Daily Food Cost $ _____
	Step 2
	  Food Cost $ _____ ÷ 23 Serving Days
	
	= Daily Food Cost $ _____

Step 3
  Ending Inventory $ _____
÷ Daily Food Cost $ _____
 	
= Days of Inventory on Hand _____
	Step 3
	  Ending Inventory $ _____
	÷ Daily Food Cost $ _____
	
	= Days of Inventory on Hand _____

East Middle School	West Middle School

Step 4
 	
  # of Serving Days   _____
÷ Days of Inventory on Hand   _____
 	
  = Inventory Turnover Rate   _____
	Step 4
	
	  # of Serving Days _____
	÷ Days of Inventory on Hand _____
	
	  = Inventory Turnover Rate _____

Questions:

1. Does East Middle School have an acceptable days of inventory on hand?
   a. Yes
   b. No
   c. Not enough information

2. Which site has the best days of inventory on hand?
   a. East Middle School
   b. West Middle School
   c. Both have similar days of inventory on hand
   d. Not enough information

3. Does West Middle School have an acceptable inventory turnover rate?
   a. Yes
   b. No
   c. Not enough information

4. Which site has the best inventory turnover rate?
   a. East Middle School
   b. West Middle School
   c. Both have similar "inventory turnover rate"
   d. Not enough information

5. What is the beginning inventory for April at East Middle School?
   a. $7,120
   b. $4,415
   c. $4,440
   d. $6,985

6. What is the beginning inventory for April at West Middle School?
   a. $7,120
   b. $4,415
   c. $4,440
   d. $6,985

Perishable Foods

Inventory management systems, first-in/first-out (FIFO), and first-expired/first-out (FEFO) are tracking systems that are most often used with perishable food items. In school nutrition programs, the ideal inventory management system is to produce the right amount of food items, in the right quantity, at the right time.

Tracking the shelf life of perishable foods requires planning, documentation, and an inventory control system. The inventory control system will help guard against waste and financial loss caused by letting the best-used date expire. Some inventory control strategies are used to protect perishable foods.

Recordkeeping

Objective: Identify recordkeeping practices for keeping accurate records and tools to maintain accuracy.

Recordkeeping is a basic requirement for inventory management. Without accurate records of foods received, issued, and used, the manager cannot manage food production or meet meal pattern requirements. Inventory records provide the manager with current and reliable information on food cost that is then used to make day-to-day decisions.

Food and supplies account for 40% or more of program revenues and warrant the time it takes to keep adequate and accurate records of products. In order to have a complete picture or audit trail, a good recordkeeping system needs to include menus, orders, receiving records, requisitions, production records, and point-of-sale or serving records.

Damaged or Discarded Product Log

Instructions: School nutrition employees will record the product name, quantity, action taken, reason, initials, and date each time a food or food product is damaged and/or will be discarded. The school nutrition manager will verify that school nutrition staff are discarding damaged food properly by visually monitoring school nutrition staff during the shift and reviewing, initialing, and dating this log daily. Maintain this log for a minimum of 1 year.

Date	Time	Vendor or School	Product Name	Temperature	Corrective Action Taken	Reason	Initials/Date	Manager Initials/Date

Source: Institute of Child Nutrition. (2016). *Food safety SOP resources.* Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-logs/

Inventory Control Sheet

Name of Site: _____   Manager: _____

On Site: Yes _____ No: _____   Central Kitchen: Yes: _____ No: _____

Inventory Period: ___/___/___ to ___/___/___   Beginning Inventory: $_____

Food Item	Purchase Unit – Size & Description (case, bag, can, lb)	# of units on hand	Unit Cost	Total Cost
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
			$	$
	Page_____ Total			$

Source: Institute of Child Nutrition. (2016). *Food safety SOP resources.* Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-logs/

Removing or issuing food or supplies is another point where controls are needed. Allowing several different staff to remove products from storage areas decreases efficiency and increases the potential for theft. Practicing FIFO or FEFO stock rotation and training staff to check "use-by date" or delivery date to ensure older products are used first are two best practices your staff can learn to use.

Storeroom Purchases and Disbursements

Date	Food Items	Purchase Unit (case, bag, can, lb)	Quantity In	Quantity Out	# of Units on Hand	Unit Cost	Total Cost
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
						$	$
					Inventory Total (page _____)	$	$

Source: Institute of Child Nutrition. (2016). *Food safety SOP resources*. Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-logs/

Production records and/or storeroom requisitions will verify items used. Keeping records of food in storage is critical for maintaining an accurate inventory count. The specific product code number or GTIN should be listed on the requisition along with the initials of the person(s) who removed the stock. For improved traceability, lot numbers should also be listed. Food and supplies that are delivered directly to production or serving areas rather than storage areas, such as milk, must also be recorded on a requisition. Requisitions can also be used for completing production records.

Loss Prevention

Some causes of inventory loss may include:
- **Spoilage caused by food kept too long (beyond useful life) or is improperly stored**
  Food that is not rotated and/or properly stored will spoil and result in loss of inventory. Using best practices for storage will prevent loss of product.
- **Carelessness with supplies such as silverware and small dishes**
  Students and dish room staff may be careless when removing and discarding paper or disposable waste from trays and may remove silverware and small dishes. When these small items are thrown away, it results in substantial costs over a school year.
- **Customer, staff, or distributor theft**
  Although most people are honest, good foodservice management practices include controls to prevent theft. Control procedures should be planned to eliminate the opportunities for theft by employees, other persons who may have access to the kitchen, and customers on the service line.

Calculating Food Cost and Cost per Meal

Instructions: Using the worksheet from the previous activity, calculate Step 5 to determine the cost per meal. Then answer the questions that follow. Work on your own to complete this activity. Take about 5 minutes to complete the activity.

East Middle School	West Middle School
Step 1 Beginning Inventory 3/1 $ 5,525 + Food Purchases/USDA $ 9,650 - Ending Inventory 3/31 $ 4,440 ─────────────── = Food Cost $ 10,735	**Step 1** Beginning Inventory 3/1 $ 6,985 + Food Purchases/USDA $ 4,550 - Ending Inventory 3/31 $ 7,120 ─────────────── = Food Cost $ 4,415
Step 2 Food Cost $ 10,735 ÷ 23 Serving Days = Daily Food Cost $ 466.74	**Step 2** Food Cost $ 4,415 ÷ 23 Serving Days = Daily Food Cost $ 191.96
Step 3 Ending Inventory $ 4,440 ÷ Daily Food Cost $ 466.74 = Days of Inventory on Hand 9.5	**Step 3** Ending Inventory $ 7,120 ÷ Daily Food Cost $ 191.96 = Days of Inventory on Hand 37.1
Step 4 # of serving days 23 ÷ days of inventory on hand 9.5 = Inventory turnover rate 2.4	**Step 4** # of serving days 23 ÷ days of inventory on hand 37.1 = Inventory turnover rate 0.62
Step 5 Daily Food Cost $ 466.74 ÷Meals prepared 250 = Cost per meal $ _____	**Step 5** Daily Food Cost $ 191.96 ÷ Meals prepared 110 = Cost per meal $ _____

1. Which school had the lowest food costs per meal?
         a. East Middle School
         b. West Middle School

2. When the ending inventory was taken at East Middle School on March 31st, a mistake was made in the February inventory. The person recording the stock on hand failed to record 14 cases of deluxe pre-cooked chicken breast at the cost of $82.00 per case. Calculate the value of this mistake to determine the actual value of the ending inventory for March 31st for East Middle School. Recalculate the food cost per meal.

> Beginning Inventory $ _____
> \+ Food Purchases/USDA $ _____
> – Ending Inventory $ _____
> = Food Cost $ _____
>
> Food Cost $ _____÷ ____ Serving Days
> = Daily Food Cost $ _____
>
> $ _____ Daily Food Cost
> ÷ 250 meals prepared
> = Cost per meal $ ____

3. Which school has the lowest food costs per meal?
    a. East Middle School
    b. West Middle School

Lesson 3 Best Practices

Instructions: Make a list of best practices for receiving and storing products that you have learned in this lesson. List ways you can apply today's information to improve controlling inventory cost procedures in your school.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Lesson 4
Forecasting

> **Objective:** Recognize the importance of an accurate inventory and the impact it has on forecasting.

Forecasting is the process of analyzing current and historical data to determine future trends. In child nutrition, it involves predicting and estimating the goods, works, and services needed in specified areas for the upcoming year and/or assessing your needs by reviewing past and current purchasing activities. An ordering system can be used to assist the manager with forecasting. One acceptable ordering system you can implement to prevent over-ordering is a par value system that establishes a maximum quantity to keep on hand. The par value is the amount needed to fulfill menu requirements for one ordering period, usually one week, plus a small amount for safety stock. Some factors to consider when setting up par levels is storage space, frequency of deliveries, vendor minimum delivery amounts, and value of the product. Meaning, you do not want high-cost items sitting in inventory.

Ordering

> **Objective:** Design an inventory management plan.

When placing an order using a par level system, the order is the amount needed to bring inventory back to the maximum or par level. If an item is served more than once between deliveries, you must also consider how much will be used before the order is received, such as milk. Inventory on hand should be checked before placing the order and subtracted from the total quantity needed.

Forecasting

Forecasting can greatly affect inventory control. When forecasting is not accurate, and products are ordered in excess:

- too much money is tied up in inventory, which reduces cash flow;
- there is more opportunity for spoilage;
- the possibility of theft is increased;
- more products become obsolete; and
- the quality of products deteriorates over time.

There are several best practices to help reduce having out of stock food items:
- • planning cycle menus,
- • ordering based on menus,
- • sharing menus and expected order quantities with vendors in advance,
- • minimizing menu substitutions, and
- • maintaining a low inventory of menu items, so ordering reflects usage.

Production

Objective: Explain the impact production records have on inventory control.

Production records impact inventory control by ensuring correct products are used, portion sizes are correct, and waste from production is controlled. If using cycle menus, production records can be pre-printed with the following information:
- • product codes/GTIN,
- • recipe numbers,
- • serving size, and
- • serving utensils required.

Lunch Production Record Sample

Date: April 15	Planned Milk	
Site: Rainy Day Middle School	1% Unflavored	100
Manager: Joe Middleton	FF Unflavored	100
	FF Flavored	100

	Meals Planned	Meals Served
Student Meals	260	
Adult Meals	40	
Total Meals	300	

Menu Item	Recipe or Product #	Portion Size	Planned # of Servings	Total Planned Quantity	Meat/meat alt	Grain/Bread	Fruit	Dark Green Veg	R/O veg	Legumes	Starchy Veg	Other Veg	Additional Veg	Actual # of Servings	Actual Quantity Used	After Cook	Begin Service	End Service	Production Notes
																			Note: List the amount of leftovers or discarded. If leftover, label and date.
Catfish Fillets		1 fillet	150		2 oz	1 oz													
Chicken Nuggets		5 pieces	150		2 oz	1 oz													
Garden Salad		1 c	100					½ c	¼ c			¼ c							
Cole Slaw		¼ c	75									¼ c							
Broccoli and Carrots w/ Dip		½ c	150					¼ c	¼ c										
Seasoned Corn		½ c	100								½ c								
Steamed Broccoli		¼ c	80					¼ c											
Apple Wedges		½ c	150				½ c												
Strawberry and Bananas		½ c	150				½ c												
Whole Wheat Rolls		1 oz	125			1 oz													
Tarter Sauce		12 g	150																
Ranch Dressing FF		1.5 oz	250																
Barbeque Sauce		1.5 oz	75																
Catsup		9 g	100																

Developing an Order

Instructions: Rainy Day Middle School places its food order on Monday and receives the previous weeks' order on Monday. Mr. Middleton, the manager, checks the inventory on Thursday to begin making his order. Look at the order guide and help Mr. Middleton develop his order for the following menu. The average daily participation is 260 student lunches and 40 adult lunches. Milk is delivered Monday and Thursday.

Product Name	Product #	Pack Size	Monday			Thursday		
			O/H	PAR	Order	O/H	PAR	Order
Meat/Meat Alternate								
Catfish, Whole Grain-Rich Fillets	100201	4/10 lbs bags		3 cases		½ case	3 cases	
Chicken Nuggets Whole Grain-Rich	110462	4/2.5 lbs case		4 cases		2 cases	7 cases	
Vegetables								
Baby Carrots, Fresh	100352	12/2 lbs bags/cs		1 case		¾ case	1 case	
Broccoli Florets, Fresh	110480	38/6 lbs bags/cs		1 case		8 bags	1 case	
Broccoli, Frozen	110473	6/5 lbs case		1 case		4/5 lb boxes	2 cases	
Corn, Whole Kernel	100313	6/#10 cans		3 cases		1 ½ cases	6 cases	
Cole Slaw Mix	100343	2/5 lbs bags/cs		1 case		¼ bag	1 case	
Fruit								
Apples, Fuji, Fresh	100522	40 lbs		1 case		¼ case	1 case	
Strawberries, Sliced, Frozen	100254	6/5 lbs bags/cs		1 case		4 bags	1 case	
Bananas	110161	40 lbs		1 case		5 lbs	1 case	
Breads								
Frozen Whole Wheat Rolls	100466	180 rolls/case		4 cases		2 ¾ cases	4 cases	
Dairy								
Milk 1% unflavored	100011	50/8 oz /crate		21 crates		21 crates	21 crates	
Milk fat-free unflavored	100012	50/8 oz /crate		21 crates		21 crates	21 crates	
Milk fat-free flavored	100013	50/8 oz /crate		21 crates		21 crates	21 crates	

Product Name	Product #	Pack Size	Monday			Thursday		
			O/H	PAR	Order	O/H	PAR	Order
Condiments								
Tartar Sauce 9 g	100388	500 pkt/ case		0 case		¾ case	1 case	
Ranch Dressing FF 1.5 oz	100350	84 pkt/ case		4 cases		1 case	7 cases	
Barbeque Sauce 9 g	100340	96 pkt/ case		2 cases		2 ¼ cases	7 cases	
Catsup 9 g	110187	1000 pkt/ case		2 cases		½ case	2 cases	

Purchasing

USDA requires participating schools in the National School Lunch Program/School Breakfast Programs (NSLP, SBP) to follow competitive procurement bid processes. These processes require schools to submit nutritional specifications for each item they want to purchase, ensuring all products meet regulations. Although this is usually done at the district level, item specifications will assist managers in purchasing the correct items.

Look at the USDA Agricultural Marketing Service specification, **FEDERAL PURCHASE PROGRAM SPECIFICATION (FPPS) FOR PORK LOIN ROAST, BONELESS, FROZEN (FPPS-PLR-2018).** This handout is an example of a bid specification with nutritional requirements.

USDA

**Agricultural
Marketing
Service**

APPROVED

**FEDERAL PURCHASE
PROGRAM SPECIFICATION
(FPPS) FOR PORK LOIN ROAST,
BONELESS,
FROZEN (FPPS-PLR-2018)**

Agricultural Marketing Service (AMS)
Livestock and Poultry (LP) Program
Food Safety and Commodity Specification (FSCS)Division
Room 2628 S-Bldg, Phone: (202) 692-0342

Supersedes: FPPS-PLR-2018 August 2018 – Changes
from previous requirements in **blue**

Effective: November 2018

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100   ITEM DESCRIPTION

110   <u>Pork Loin Roast, Boneless, Frozen</u> – This item is as described in the Institutional Meat Purchase Specifications (IMPS) Item Number 414, Purchaser Specified Option (PSO) 3. Individual boneless roast units shall not be marinated, weigh 5.0 ± 0.75 pounds, and be vacuum packaged.

200   APPLICABLE DOCUMENTS

210   IMPS for Fresh Pork - Series 400, effective November 2014.

300   CHECKLIST OF REQUIREMENTS

310   All items shall be produced in accordance with Food Safety and Inspection Service (FSIS) regulations. The contractor's production plan, submitted to the FSCS Division, shall adhere to the following AMS Checklist of Requirements.

400   MATERIALS

410   The contractor's production plan shall include procedures to address conformance with the following material requirements.

420   MEAT COMPONENT

421   Pork derived from hog carcasses shall be the only meat component allowed. Pork derived from boar and sow carcasses is not permissible.

422   Domestic Origin – All pork shall originate from U.S. produced livestock as defined in the Master Solicitation for Commodity Procurements and Supplement.

423   Harvesting – Hogs shall be harvested in facilities that comply with the following requirements:

Humane Handling – Hogs shall be humanely handled in accordance with all applicable FSIS regulations and AMS requirements.

Spinal Cord Removal – All spinal cord tissue shall be removed during the harvesting process.

424   Pork – Pork shall comply with the following requirements:

Traceability – Contractors are responsible for providing sufficient product traceability and shall have records to verify the source of raw materials used in each lot of product.

Handling – All pork shall be maintained in excellent condition. The contractor's production plan shall include detailed production scheduling that addresses time and temperature controls necessary to maintain excellent condition of the pork.

Lean Quality – Fresh-chilled pork shall be reasonably uniform in color (slightly two-tone color is permissible) ranging from light pink to red. The pork muscles shall not exhibit any evidence of pale, soft, and/or exudative conditions.

Objectionable Materials – Pork shall be free of skin, bone, cartilage, organ tissue, significant glandular tissue, heavy connective tissue and foreign materials.

425   Mechanical Separation – Pork that is mechanically separated from bone with automatic deboning systems or advanced lean (meat) recovery (AMR) systems is not allowed.

500   PROCESSING

510   Processing Date – Pork loin roasts shall be processed into finished product form no more than 60 days prior to shipment.

511   Pork loin roasts shall be produced as outlined in **Section 100 – Item Descriptions** and as defined in IMPS Item Number 414, PSO 3.

512   Pork loin roasts shall have the belly strap removed.

513   Weight – Individual pork loin roasts shall weigh 5.0 ± 0.75 pounds each.

520   METAL DETECTION

521   All products shall be free of metal contaminants. Detection of stainless steel, ferrous, and non-ferrous (e.g., lead, copper, and aluminum) metals is required. The contractor's production plan shall identify and describe the equipment, location, detection procedure, sensitivity levels, frequency of equipment validation, and corrective action procedures.

600   FINISHED PRODUCT LIMITATIONS

610   The declared serving size, fat content and sodium level shall be stated on the nutrition facts panel on each label according to FSIS nutritional labeling regulations.

610   FAT

611   The fat content of the finished product shall not exceed 10 percent.

611.1   ((Declared Fat (g) / Declared Serving Size (g; reference amount customarily consumed (racc))) X 100) ≤ 10 percent.

612   External (subcutaneous) fat thickness of individual pork loin roasts shall be an average of one-eighth (⅛) in. (3 mm) with the maximum thickness at any one point not to exceed one-quarter (¼) in. (6mm).

620   SODIUM

621   Sodium level shall not exceed 70 mg per 100 gram basis

622   ((Declared Sodium Level (mg) X 100) / Declared Serving Size (g; racc)) ≤ 70.

700   STATE OF REFRIGERATION

710   Pork loin roasts shall be frozen to an internal temperature of not higher than 0°F (-17.8°C) within 72 hours from the time of final fabrication of the production lot.

800   PREPARATION FOR DELIVERY

810   PACKAGING

811   Individual pork loin roasts (5.0 ± 0.75 lbs. each) shall be placed into a flexible immediate container and vacuum packaged.

820   PACKING

821   For material number 111015, twelve (12) individual pork loin roasts (5.0 ± 0.75 pounds each) shall be packed per shipping container with a net weight of 60 ± 4 pounds. For material number 111061, six (6) individual pork loin roasts (5.0 ± 0.75 pounds each) shall be packed per shipping container with a net weight of 30 ± 2 pounds.

830   LABELING

831   The shipping containers shall be in compliance with the National Motor Freight Classification, or the Uniform Freight Classification, as applicable. Both the immediate and shipping containers shall be labeled to include all information required by FSIS regulations, be illustrated in the contractor's production plan, and contain the following information:

832   Immediate Container Labels – Immediate container labels shall be commercially labeled (e.g. "Brand X") and contain the following information:

832.1   Product name.

832.2   Manufacturer name and address.

832.3   Ingredient declaration (including single ingredient products).

832.4   An allergen statement in a format which complies with the Food Allergen Labeling and Consumer Protection Act (FALCPA) for any product which contains milk, eggs, fish, crustacean shellfish, tree nuts, peanuts, soy or wheat;
e.g. Allergen: Contains _____.

832.5   A traceability code that includes information regarding production establishment, production date and production lot.

832.6   Nutrition Facts panel based on actual nutritional analysis of the product.

832.7   Cooking Instructions.

832.8   Safe handling instructions.

833.2   Applicable purchase order number.

833.3   A traceability code that is traced back to establishment number, production lot, and date.

833.4   A nutrition facts panel based on actual nutritional analysis of the product.

833.5   The appropriate material number listed in the following table:

Packing Orientation	Material Number
12 roasts / 60 ± 4 pound case	111015
6 roasts / 30 ± 2 pound case	111061

832.8   Safe handling instructions.

832.9   A "Best-If-Used-By" date that is 180 calendar days from the date of production.

833   Shipping Container Labels – Shipping container labels will contain the following information:

833.1   USDA shield at least 2 inches high and appearing on the top of the container or on the principal display panel.

833.6   Product Name: Pork Loin Roast, Boneless, Frozen

833.7   An allergen statement in a format which complies with the Food Allergen Labeling and Consumer Protection Act (FALCPA) for any product which contains milk, eggs, fish, crustacean shellfish, tree nuts, peanuts, soy or wheat;
e.g. Allergen: This product contains _____ .

840   CLOSURE

841   Shipping containers shall be closed by strapping, taping or gluing. When strapping is used, the initial closure (usually the bottom of container) shall be secured by the gluing or taping method.

850   PALLETIZED UNIT LOADS

851   All product shall be stacked on new or well-maintained pallets and palletized with shrink wrap plastic, unless otherwise specified in the solicitation. Pallet loads shall be stacked in a manner that minimizes the overhang of the shipping containers over the edges of the pallets and exposes each shipping container's principal display panel to facilitate certification examination

900   DELIVERY UNIT

910 For material number 111015, each delivery unit shall consist of 640 cases (7,680 individual pork loin roasts) with a net weight not to exceed 39,040 pounds. For material number 111061, each delivery unit shall consist of 1,280 cases (7,680 individual pork loin roasts) with a net weight not to exceed 39,040 pounds.

1000 DELIVERED PRODUCT

1010 SIZE AND STYLE OF CONTAINER

1011 Only one size and style of immediate and shipping containers shall be offered in an individual shipping unit.

1020 TEMPERATURE

1021 All products shall not exceed 0 °F at the time of loading, throughout shipment, and at delivery.

1030 SEALING

1031 Sealing - All products shall be delivered to AMS assigned destinations under seal with tamper proof, tamper resistant, serially numbered, high security seals that meet the American Society for Testing and Materials Standard (ASTM) F 1157-04 and/or the International Organization for Standards (ISO) 17712-2010 as required under the Master Solicitation. Seals shall be >⅛th inch diameter cable, high-security bolt, or equivalent.

1100 PRODUCT ASSURANCE

1110 WARRANTY AND COMPLAINT RESOLUTION

1111 Warranty – The contractor shall guarantee that the product complies with all contractual requirements required under the Master Solicitation and the Supplement.

1112 Complaint Resolution – The contractor's production plan shall provide steps taken to resolve complaints received on the product (i.e. point of contact, cause and effect analysis, corrective and preventative actions taken, and product replacement).

1120 NON-CONFORMING PRODUCT

1121 The contractor shall have documented procedures that assure nonconforming product identification, segregation, and disposition in order to prevent misuse and that nonconforming product is not delivered to USDA. The plan must address 1) control and segregation of non-conforming product, 2) removal of any USDA markings, and 3) disposition of non-conforming product, including vendor documentation of final disposition (e.g., diverted to commercial production, or destroyed).

1130   CONTRACTOR CHECKLOADING

1131   Contractor shall perform checkloading examinations at the time of shipment and issue a contractor's certificate to accompany each shipment that includes all of the following information:

1131.1   Purchase Order Number/Purchase Order Line Item Number;

1131.2   Sales Order Number/Sales Order Line Item Number;

1131.3   Destination of shipment;

1131.4   Name of Product and applicable Material Number;

1131.5   Shipping Date;

1131.6   Production lot number(s) and date each lot was produced along with shipping container and immediate container code(s) and the code used that provides traceability to establishment number, production lot and date;

1131.7   Count of shipping containers and total projected net weight in each production lot;

1131.8   Identity of car or truck (car numbers and letters, seals, truck license, etc.) as applicable;

1131.9   Contractor certification that product conforms with the applicable specification (FPPS-PLR-2018);

1131.10   Count and projected net weight verified and; 1131.11 Signature of company official responsible for checkloading.

Developing an Inventory Management Plan

Instructions: Work in your table teams to develop an inventory management plan. Using the information you have learned today and any of the handouts and forms in the activities and Appendix, develop an inventory management plan. When you have completed the plan, put it on a piece of chart paper, and post it on wall space near your table group. You will have about 15 minutes to complete the activity. When everyone has finished, take about 5 minutes and walk around the room, moving clockwise to review the other group's plans. There are no right or wrong answers to this activity.

_____

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Appendix

- Thermometer Calibration Log
- Vendor Checklist
- Employee Inventory Management Training Record
- Inventory Management Checklist
- Site Inventory Management and Tracking Checklist
- Production Log
- Receiving Log
- Activity Answer Keys

Thermometer Calibration Log

Instructions: School nutrition staff will record the calibration temperature and corrective action taken, if applicable, on the Thermometer Calibration Log each time a thermometer is calibrated. The school nutrition manager will verify that school nutrition staff are using and calibrating thermometers properly by making visual observations of employee activities during all hours of operation. The school nutrition manager will review and initial the log daily. Maintain this log for a minimum of 1 year.

Date	Thermometer Being Calibrated	Temperature Reading	Corrective Action	Initials	Manager Initials/ Date

Vendor Checklist

Do your vendors meet your approval?

_____ Vendor delivers food or other supplies during agreed upon time frame.

_____ Driver is clean, courteous, and wearing a uniform.

_____ Driver does not smoke, eat, or drink while delivering.

_____ Driver does not waste time chatting with child nutrition staff.

_____ Driver works quickly to deliver food or supplies to appropriate area.

_____ Vendor truck is clean.

_____ Products have been shipped at appropriate temperature.

_____ Driver does not use vulgar language.

_____ Driver does not sexually harass child nutrition staff.

_____ Driver does not say anything negative about their company, your operation, or anyone or anything else.

_____ Vendor delivers complete order with few substitutions.

_____ Vendor follows appropriate policies on substitutions.

_____ Vendor has very few mis-picks or out-of-stock on the truck.

_____ Products are billed at the contract price.

_____ Products are shipped so that they can be used before expiration dates.

_____ Driver does not ask you to accept products that you did not order.

_____ Driver handles the products in such a way that he does not damage them.

Employee Inventory Management Training Record

Date: _____

Location: _____

Directions: Use this form to record inventory management training provided to employees. Maintain this record for a minimum of 1 year.

Employee Name	Length of Training	Training and Materials Provided

Source: Institute of Child Nutrition. (2018). *Employee inventory management training record*. Retrieved from
https://theicn.org/icn-resources-a-z/standard-operating-procedures/

INVENTORY MANAGEMENT CHECKLIST

Date_____ Observer_____

Instructions: Use this checklist daily. Determine areas in your operations requiring corrective action. Record corrective action taken and keep completed records in a notebook for future reference.

COLD HOLDING	**Yes**	**No**	**Corrective Action**
• Refrigerators are kept clean and organized.	☐	☐	_____
• Temperature of cold food being held is at or below 41 ºF.	☐	☐	_____
• Food is protected from contamination.	☐	☐	_____

REFRIGERATOR, FREEZER, AND MILK COOLER	**Yes**	**No**	**Corrective Action**
• Thermometers are available and accurate.	☐	☐	_____
• Temperature is appropriate for pieces of equipment.	☐	☐	_____
• Food is stored at least 6 inches above the floor or in walk-in cooling equipment.	☐	☐	_____
• Refrigerator and freezer units are clean and neat.			
• Proper chilling procedures are used.	☐	☐	_____
• All food is properly wrapped, labeled, and dated.	☐	☐	_____
• The FEFO or FIFO (First-expire/First-out or First-In/First-out) method of inventory management is used.	☐	☐	_____
• Ambient air temperature of all refrigerators and freezers is monitored and documented at the beginning and end of each shift.	☐	☐	_____

FOOD STORAGE AND DRY STORAGE	**Yes**	**No**	**Corrective Action**
• Temperature of dry storage area is between 50 ºF and 70 ºF or State public health department requirement.	☐	☐	_____
• All food and paper supplies are stored at least 6 inches above the floor.	☐	☐	_____
• All food is labeled with name and received date.	☐	☐	_____
• Open bags of food are stored in containers with tight fitting lids and labeled with common name.	☐	☐	_____

FOOD STORAGE AND DRY STORAGE   **Yes**   **No**   **Corrective Action**

- The FEFO or FIFO (First-expire/First-out or First-In/First-out) method of inventory management is used.   ☐   ☐   _____

- There are no bulging or leaking canned goods.   ☐   ☐   _____

- Food is protected from contamination.   ☐   ☐   _____

- All food surfaces are clean.   ☐   ☐   _____

- Chemicals are clearly labeled and stored away from food and food-related supplies.   ☐   ☐   _____

- There is a regular cleaning schedule for all food surfaces.   ☐   ☐   _____

- Food is stored in original container or a food grade container.   ☐   ☐   _____

Source: Institute of Child Nutrition. (2018). *Inventory management checklist*. Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-procedures/

Site Inventory Management and Tracking Checklist

The following checklist may be used along with SOPs for monitoring site processes affecting inventory. The site checklist should be used a minimum of once per month.

Task	Status		
Menu Planning	**Yes**	**No**	**Corrective Action**
Menus are consistently followed. Pre-approved substitutions are made when necessary.			
Feedback is provided to menu planners about popularity of menus based on production and sales records.			
Any issues with menu quality or difficulty of preparation are reported to the menu planner.			
Forecasting and Ordering	**Yes**	**No**	**Corrective Action**
Order guides are used when placing orders			
Par values are used for applicable			
Production records from previous menu cycle are used for forecasting production.			
Only items needed to prepare menu selections are ordeded.			
Inventory is checked before placing orders.			
Receiving	**Yes**	**No**	**Corrective Action**
Stie personnel follow the SOP for receiving.			
Only trained employees receive food and supplies.			
GTIN or product codes are checked and lot numbers recorded when products are received.			
Products sold by weight are weighed when received.			
Product substitutions are not accepted unless pre-approved.			
Storage and Issuing	**Yes**	**No**	**Corrective Action**
Storage areas are kept locked throughout the day, especially during meal service.			
An SOP is followed for kitchen visitors and customers access to storage and preparation areas.			
An SOP is followed for proper dry, refrigerated, and freezer storage.			
An SOP is followed on the issuing process.			

Inventory Control	Yes	No	Correction Action
Inventory level meets specified goals e.g., days of inventory on hand.			
Physical inventory is taken on the last day of each month.			
Two employees are assigned to take physical inventories.			
Product codes or GTIN, lot numbers, are storage location are recorded in inventory records (e.g., perpetual inventory cards, storeroom requisition).			
Storage areas are labeled with product codes and organized with highest volume products closest to the door.			
Products are kept in original cases and lot numbers are written on inner packages (or cut from case and kept) when removed from case.			
Heavy items are kept on lower shelves. Dollies, dunnage racks, and carts are used to store food.			
Chemicals are stored away from food and paper supplies.			
Production	**Yes**	**No**	**Corrective Action**
Production records are completed immediately after each meal.			
Production records are completed with product coder or GTIN and lot numbers			
Food is prepared by cooking small batched every 30 minutes or before each serving period.			
Stockout times are recorded on production records to improve future forecasts.			
An SOP is followed for disposal of leftovers.			
Service	**Yes**	**No**	**Corrective Action**
Specified portion sizes and serving utensils are used.			
Sales inventory records are used on each serving line, are least for a la carte items, to track sales of each item.			

Production Log

Instructions: School nutrition staff will record the date, product name, start and end time of production, the two temperature measurements taken, any corrective action taken, and the amount of food prepared on the Production Log. The school nutrition manager will verify that school nutrition staff are taking the required temperatures and following the proper preparation procedure by visually monitoring school nutrition staff during the shift and reviewing, initialing, and dating the log daily. Maintain this log as directed by your State agency.

Date	Start Time	Product Name	Temp #1	Temp #2	Amount Prepared	Corrective Actions	End Time	Employee Initials	Verified By/Date

Receiving Log

Instructions: Use this log for deliveries or receiving foods from a centralized kitchen. Record any temperatures and corrective action taken on the Receiving Log. The school nutrition manager will verify that school nutrition staff are receiving products using the proper procedure by visually monitoring school nutrition staff and receiving practices during the shift and reviewing the log daily. Maintain this log for a minimum of 1 year.

Date	Time	Vendor or School	Product Name	Temperature	Corrective Action Taken	Initials/Date	Manager Initials/Date

Source: Institute of Child Nutrition. (2018). *Receiving Log.* Retrieved from https://theicn.org/icn-resources-a-z/standard-operating-procedures/

Inventory Management Case Studies Answer Key

Instructions: Read the case study assigned to your table team, discuss it with your team, and answer the questions after the case study. Choose a spokesperson to report to the group your team's findings. Take about 5 minutes to read and discuss the case study and 5 minutes for class discussion.

Case Study #1:

Warren Elementary School has very little storage space. The distributor delivers food every Tuesday, right before lunch is served. 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 freezer and refrigerator. 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 the manager signs the invoice and sends it in for payment.

1. Does this procedure follow best practices for receiving?
2. How does the case study relate to inventory management?
3. Does the solution fix the problem or potentially make it worse?
4. What could be done to improve the inventory management system?

Case Study #1 Possible Answers:
- The procedure does not follow best practices for receiving. You do not know if the custodian checked in the delivery.
- Was the custodian trained to check in the delivery?
- Temperatures of the frozen or refrigerated items were not taken.
- The items sold by weight were not weighed.
- The dry foods were vulnerable to theft or tampering.
- None of the products were inspected.
- The driver's ID was not checked.
- The truck was not inspected.
- The invoices were not checked against orders with discrepancies noted on the delivery receipt.
- This solution could potentially make it worse.
- The staff should request that the distributor deliver food at a time when school nutrition staff can check it in.

Case Study #2:
It is the last week of school. You have put out the last two cases of apple juice (the student's favorite). You are serving a normal breakfast. A student brings back their apple juice and states that it smells funny. You smell it, and it has fermented. You check all of the other cases of juice and find that most of them are molded, and the others do not smell good. When you checked the boxes, the label with the date of receipt on it has the date of October of the previous year.

1. Does this procedure follow best practices for receiving?
2. How does the case study relate to inventory management?
3. List possible reasons why the juice was still in the cooler.
4. Discuss ways this could have been prevented. What needs to be done to prevent it from happening again?
5. What do you need to do to complete the breakfast components? Remember, the breakfast meal must be reimbursable.

Case Study #2 Possible Answers:
- Best practices were not followed because the date on the cases of juice was not checked if the juice was just received.
- The person putting up the food did not use the First-expire/First-out (FEFO) or First-in/ First-out (FIFO) method to stock the food. New deliveries of juice were put in front of the older juice.
- Train or retrain the staff that put up the deliveries to use the proper method for stocking inventory.
- Check to see if you have plenty of fresh, canned, or frozen fruit to serve.
- Call another school to see if they have extra juice or fresh, canned, or frozen fruit you could serve.
- Inform your director of the issue.
- Developing an inventory management system could improve the current system.
- Use the FEFO or FIFO method to stock inventory.
- Train or retrain the staff that put up the deliveries using the FEFO or FIFO.

Inventory Management Case Study: Storage Answer Key

Instructions: Read the case study assigned to your table team, discuss it with your team, and answer the questions following the case studies. Choose a spokesperson to report to the group your team's findings. Take about 5 minutes to read and discuss the case studies and 5 minutes for class discussion.

Case Study #1:
Your manager had to go to another school to get some more fresh fruit for lunch. While he was gone, one of your coworkers took something out of the storeroom and put it in the trunk of their car. Nothing was said to the manager when he returned. A couple of weeks later, it happened again only this time the item taken was a case of ground beef. Again, no one said anything to the manager. When you finally get the nerve to tell the manager, he does nothing about the situation. The staff member continues to take from the storeroom and refrigerator/freezer.

1. What should you have done to prevent the theft?
2. Since the manager did nothing, what should you have done at that point?
3. How long do you think someone should steal from the child nutrition program before you say something?
4. What could be done to improve the inventory management system?

Case Study #1 Possible Answers:
- Tell the manager about the theft.
- If the manager does nothing about the theft, report it to the school nutrition director.
- It should be reported right away. The child nutrition program is a federally funded program using our tax dollars.
- All storage areas should be locked with the manager and two other people responsible for the keys.
- The manager should have listened to you and thanked you for telling him about the theft. Then he should have called that person into his office and talked to them about the theft.

Case Study #2:
It is the last week of school. You are ready for school to be out for the summer. You are thinking about all the things you and your family have planned. At the beginning of the month, the manager assigned a list of things to be done before the last day of school to each of the staff. You have been assigned to clean the walk-in cooler and freezer and inventory the items left in both. The manager is having minor surgery and will not be at school the last week. The last day of school is finally here, and you have completed all of the items on your list except cleaning out the freezer. You took inventory of all the items in the freezer; that should be enough. Who is going to know if you cleaned it out? The manager was at the school four days after the last day of school and noticed the thermometer on the freezer registered 60 °F. She looked at the temperature log and noticed the temperature was not taken during the last week of school.

1. What should the manager do?
2. Go through the following list of food items and decide what needs to be done by placing an X in the appropriate box.

Inventory Management and Tracking
           Participant's Workbook
                    Appendix

3. Could this have been prevented?
4. What could be done to improve the inventory management system?

The inventory was taken at the end of the school year.

Quantity	Food Items	Keep & Move to Another School	Throw Away
2	5 gal bucket cherries – USDA Foods	•	X
15	4 oz containers peaches – USDA Foods		X
2 cases	frozen whole eggs		X
2 qts	frozen egg whites		X
3 cases	ham – USDA Foods	•	X
2 sticks	ground turkey	•	X
1	2" pan leftover corn, dated 4/14		X
1	2" pan leftover sloppy joe meat, dated 1/31		X
1 bag	Oriental blend vegetables		X
2.5 cases	frozen biscuits		X
2 cases	sausage patties	•	X
4 cases	breakfast pizza		X
1 case	blueberry muffins		X
1 case	chopped broccoli		X
1/2 case	100% fruit juice		X
1 case	diced chicken – USDA Foods	•	X
1	4" pan leftover spaghetti, no date		X
1	2" pan uncovered, cooked, ground meat, no date		X

•If the food item is still frozen, it can be moved to the freezer of another school. Otherwise, it should be thrown away because it is not known how long the food has been in the danger zone. The food must be labeled with the date, temperature, and the name of the school it came from.

Case Study #2 Possible Answers:
- First, inform the director and maintenance about the condition of the freezer if the temperature is rising.
- Get the ending inventory list and begin taking temperatures of the food that is left in the freezer. This information will be used to determine if the food can be transferred to another school or thrown away.
- The manager will then do a cost analysis on the food that will be kept and thrown away.
- If the temperature of the freezer was recorded during the last week of school, the thermometer might have shown signs of rising temperature. At that point, the director should have been contacted so maintenance could check on the freezer and possibly fix it before any food was spoiled.
- Train or retrain staff on proper procedures for checking, cleaning, and inventorying the refrigerator and freezer.

Perpetual Inventory Case Studies Answer Key

Instructions: Read the case study assigned to your table team. Discuss with your team how you would handle the situation. Choose a spokesperson to report to the group your team's findings. The answers to the questions are subjective. Therefore, accept all reasonable answers. Take about 5 minutes to read and discuss the case studies. Then, we will spend about 5 minutes to review your decisions.

Case Study #1:
The East Middle School child nutrition manager, June, asked two of the staff, Steve and Gloria, to take inventory for her this month. It is almost time to leave. Gloria promised to be at her son's soccer game at 3:00. Gloria said that she would count while Steve wrote down the count. They finished the inventory in record time. Steve handed the inventory count to June. The next day June was working on the weekly food order to be placed on Monday. According to the inventory count she received from Steve, there are four cases of ground beef. June's perpetual inventory indicated that there were only 1.5 cases of ground beef. When June went to double-check the inventory, she found that there were 4 boxes of ground beef but only 1.5 sticks. The other boxes were empty. June is now wondering what other items were miscounted.

1. How would you handle this situation if you were June?
2. Discuss ways this could have been prevented.
3. What does June need to do to make sure this does not happen again?

Case Study #1 Possible Answers:
- June will either need to take a complete inventory or check the inventory that Steve and Gloria took against the perpetual inventory that she has.
- If there is time before the order has to be submitted, the manager and Gloria need to take inventory.
- All staff need to be trained/retrained on how to take inventory. Assign a staff person to take and record temperatures of the refrigerator, freezer, and storeroom if the manager is out.
- As an activity at the training, ask the staff to pair up in teams of two. Each team will go in the freezer and take inventory and temperatures of the three storage areas. When all teams have finished, bring everyone together, and discuss the outcomes.

Case Study #2:

Tony Roberts is a new manager at Sunnydale High School. The previous manager retired, leaving very little paperwork completed for the last two months of the school year. When going through the files in the manager's office, Tony found a menu for February, a production record for April 20, a perpetual inventory sheet from December, and an order form from the previous year. He did not find any recipes. It is three weeks before the first day of school, and Tony must place an order.

1. What would you do if you were in Tony's situation?
2. Discuss ways this could have been prevented.
3. What can you do to keep this situation from happening again?

Case Study #2 Possible Answers:

- Tony needs to contact the director or his supervisor and discuss the situation with them. The director/supervisor should already have menus prepared.
- Together, they can come up with a game plan. The director/supervisor can help Tony take inventory.
- The director/supervisor should require managers to take inventory the last working day of the month and the last day of school. Managers should also be required to turn in production records to their director/supervisor monthly and the last day of school.

Writing Standard Operating Procedures

Instructions:
1. Read the following SOP and add or revise any steps that would improve the traceability of products. Discuss how the SOP might be improved and note changes on the form.
2. Write CTE 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 Statement of Net Position (balance sheet).

SCOPE: This procedure applies to site child nutrition staff 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 staff members 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 the accounting period.)
6. Instruct one staff member to say the product name and quantity. **Include GTIN or product code and unit of measure.**
7. Instruct the second staff member to record the quantity of each item counted on an inventory sheet. **Include a pre-printed worksheet with the product names, GTIN, and unit of measure.**
8. **Turn cases or cans so that the product name and date received or used-by date is visible, and the oldest date product is in front.**
9. Count the inventory in the top left-hand side of the storage area, moving to the bottom right-hand side.
10. Note if a product is placed in the wrong location or in a position that compromises food safety, e.g., chemical over food products. Do not move items to a different location until after the inventory is completed.
11. 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 1/4, 1/2, or 3/4 unit.
12. Inventory products ordered by weight by the same weight units as ordered.
13. Count and write-in leftovers noting the use-by date on the inventory sheets.

THE UNIT SUPERVISOR WILL:
1. Train child nutrition staff on using the procedures in this SOP. Train different staff to take inventory, receive products, and issue food items.
2. Provide a pre-printed inventory worksheet without the 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:
Child nutrition manager will utilize the Site Inventory Management and Tracking Checklist each month. (Note: This document may be found in the Appendices.)

CORRECTIVE ACTION:
Use the SOP to retrain any child nutrition staff found not following the standard operating procedures.

VERIFICATION AND RECORD KEEPING
1. Child nutrition staff will record the name and quantity count of the food items on the Physical Inventory Worksheet**.**
2. The child nutrition 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 a perpetual inventory record with physical inventory count.

DATE IMPLEMENTED: _____BY:_____

DATE REVIEWED: _____BY: _____

DATE REVISED: _____BY: _____

Calculating Food Cost and Inventory Turnover Rate

Instructions: Using the information in the scenario, calculate the food cost for East Middle School and West Middle School. Work together in your table teams to determine how many days of inventory both schools have on hand as of March 31st. How many times did the inventory turnover at each school? Answer the questions that follow. Take about 5 minutes to complete the activity and 5 minutes to review the answers.

Calculating Food Cost and Inventory Turnover Rate Answer Key

Scenario:

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

On February 28, the last serving day of the month, the managers in both schools took a physical inventory of their commercial and USDA Foods. The value of East Middle School's inventory was $5,525, and West Middle School's total inventory was $6,985.

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

East Middle School	West Middle School
Step 1 Beginning Inventory 3/1 $ **5,525** + Food Purchases/USDA $ **9,650** - Ending Inventory 3/31 $ **4,440** = Food Cost $ **10,735**	**Step 1** Beginning Inventory 3/1 $ **6,985** + Food Purchases/USDA $ **4,550** - Ending Inventory 3/31 $ **7,120** = Food Cost $ **4,415**
Step 2 Food Cost $ **10,735** ÷ 23 Serving Days = Daily Food Cost $ **466.74**	**Step 2** Food Cost $ **4,415** ÷ 23 Serving Days = Daily Food Cost $ **191.96**
Step 3 Ending Inventory $ **4,440** ÷ Daily Food Cost $ **466.74** = Days of Inventory on Hand **9.5**	**Step 3** Ending Inventory $ **7,120** ÷ Daily Food Cost $ **191.96** = Days of Inventory on Hand **37.1**

East Middle School		West Middle School	
Step 4		**Step 4**	
# of serving days	**23**	# of serving days	**23**
÷ Days of Inventory on Hand	**9.5**	÷ Days of Inventory on Hand	**37.1**
= Inventory Turnover Rate	**2.4**	= Inventory Turnover Rate	**0.62**

Questions:

1. Does East Middle School have an acceptable days of inventory on hand?
    a. Yes
    b. No
    c. Not enough information

2. Which site has the best days of inventory on hand?
    a. East Middle School
    b. West Middle School
    c. Both have similar days of inventory on hand
    d. Not enough information

3. Does West Middle School have an acceptable inventory turnover rate?
    a. Yes
    b. No
    c. Not enough information

4. Which site has the best inventory turnover rate?
    a. East Middle School
    b. West Middle School
    c. Both have similar "inventory turnover rate"
    d. Not enough information

5. What is the beginning inventory for April at East Middle School?
    a. $7,120
    b. $4,415
    c. $4,440
    d. $6,985

6. What is the beginning inventory for April at West Middle School?
    a. $7,120
    b. $4,415
    c. $4,440
    d. $6,985

Calculating Food Cost and Cost per Meal

Instructions: Using the chart from the previous activity, calculate Step 5 to determine the cost per meal. Then answer the questions that follow. Work on your own to complete this activity

East Middle School		West Middle School	
Step 1		**Step 1**	
Beginning Inventory 3/1	$ **5,525**	Beginning Inventory 3/1	$ **6,985**
+ Food Purchases/USDA	$ **9,650**	+ Food Purchases/USDA	$ **4,550**
- Ending Inventory 3/31	$ **4,440**	- Ending Inventory 3/31	$ **7,120**
= Food Cost	$ **10,735**	= Food Cost	$ **4,415**
Step 2		**Step 2**	
Food Cost $ **10,735** ÷ **23** Serving Days		Food Cost $ **4,415** ÷ **23** Serving Days	
= Daily Food Cost	$ **466.74**	= Daily Food Cost	$ **191.96**
Step 3		**Step 3**	
Ending Inventory	$ **4,440**	Ending Inventory	$ **7,120**
÷ Daily Food Cost	$ **466.74**	÷ Daily Food Cost	$ **191.96**
= Days of Inventory on Hand	**9.5**	= Days of Inventory on Hand	**37.1**
Step 4		**Step 4**	
# of serving days	**23**	# of serving days	**23**
÷ days of inventory on hand	**9.5**	÷ days of inventory on hand	**37.1**
= Inventory turnover rate	**2.4**	= Inventory turnover rate	**0.62**
Step 5		**Step 5**	
Daily Food Cost	$ **466.74**	Daily Food Cost	$ **191.96**
÷ Meals prepared	**250**	÷ Meals prepared	**110**
= Cost per meal	$ **1.87**	= Cost per meal	$ **1.74**

1. Which school had the lowest food costs per meal?
   a. East Middle School
   b. West Middle School

2. When the ending inventory was taken at East Middle School on March 31st, a mistake was made in the February inventory. The person recording the stock on hand failed to record 14 cases of deluxe pre-cooked chicken breast at the cost of $82.00 per case. Calculate the value of this mistake to determine the actual value of the ending inventory for March 31st for East Middle School. Recalculate the food cost per meal.

        Beginning Inventory $ 5,525
        + Food Purchases/USDA $ 9,650
        – Ending Inventory $ **4,440 + 1,148**
        = Food Cost $ **9,587**

        Food Cost $ **9,587** ÷ 23 Serving Days
        = Daily Food Cost $ **416.83**

        $416.83 Daily Food Cost
        ÷ 250 meals prepared
        = Cost per meal $ **1.67**

3. Which school has the lowest food costs per meal?
    a. East Middle School
    b. West Middle School

Developing an Order Answer Key

Instructions: Rainy Day Middle School places its food order on Monday and receives the previous weeks' order on Monday. Mr. Middleton, the manager, checks the inventory on Thursday to begin making his order. Look at the order guide and help Mr. Middleton develop his order for the following menu. The average daily participation is 260 student lunches and 40 adult lunches. Milk is delivered Monday and Thursday.

Product Name	Product #	Pack Size	Monday			Thursday		
			O/H	PAR	Order	O/H	PAR	Order
Meat/Meat Alternate								
Catfish, Whole Grain-Rich Fillets	100201	4/10 lbs bags		3 cases		½ case	3 cases	**3 cases**
Chicken Nuggets Whole Grain-Rich	110462	4/2.5 lbs case		4 cases		2 cases	7 cases	**5 cases**
Vegetables								
Baby Carrots, Fresh	100352	12/2 lbs bags/cs		1 case		¾ case	1 case	**1 case**
Broccoli Florets, Fresh	110480	38/6 lbs bags/cs		1 case		8 bags	1 case	**1 case**
Broccoli, Frozen	110473	6/5 lbs case		1 case		4/5 lb boxes	2 cases	**2 cases**
Corn, Whole Kernel	100313	6/#10 cans		3 cases		1 ½ cases	6 cases	**5 cases**
Cole Slaw Mix	100343	2/5 lbs bags/cs		1 case		¼ bag	1 case	**1 case**
Fruit								
Apples, Fuji, Fresh	100522	40 lbs		1 case		¼ case	1 case	**1 case**
Strawberries, Sliced, Frozen	100254	6/5 lbs bags/cs		1 case		4 bags	1 case	**3 cases**
Bananas	110161	40 lbs		1 case		5 lbs	1 case	**1 case**
Breads								
Frozen Whole Wheat Rolls	100466	180 rolls/case		4 cases		2 ¾ cases	4 cases	**2 cases**
Dairy								
Milk 1% unflavored	100011	50/8 oz /crate		21 crates		21 crates	21 crates	**0**
Milk fat-free unflavored	100012	50/8 oz /crate		21 crates		21 crates	21 crates	**0**
Milk fat-free flavored	100013	50/8 oz /crate		21 crates		21 crates	21 crates	**0**

Product Name	Product #	Pack Size	Monday			Thursday		
			O/H	PAR	Order	O/H	PAR	Order
Condiments								
Tartar Sauce 9 g	100388	500 pkt/ case		0 case		¾ case	1 case	**1 case**
Ranch Dressing FF 1.5 oz	100350	84 pkt/ case		4 cases		1 case	7 cases	**6 cases**
Barbeque Sauce 9 g	100340	96 pkt/ case		2 cases		2 ¼ cases	7 cases	**5 cases**
Catsup 9 g	110187	1000 pkt/ case		2 cases		½ case	2 cases	**2 cases**

Developing an Inventory Management Plan Answer Key

Instructions: Work in your table teams to develop an inventory management plan. Using the information you have learned today and any of the handouts and forms in the activities and Appendix, develop an inventory management plan. When you have completed the plan, put it on a piece of chart paper, and post it on wall space near your table group. Allow about 15 minutes for the participants to complete the activity. When everyone has finished, ask the groups to spend about 5 minutes and walk around the room, moving clockwise to review the other group's plans. There are no right or wrong answers to this activity.

Possible Answer

The plan may include:

- Training (all school nutrition staff): School district policies and procedures for inventory control, ICN's Inventory Management and Tracking Training, all necessary forms for inventory control, Employee Inventory Management Training Record

- Assign staff responsible for inventory (manager and 2 staff): School district policies and procedures for inventory control, ICN's Inventory Management and Tracking Training, all necessary forms for inventory control, Employee Inventory Management Training Record

- Recordkeeping (perpetual and physical and PAR levels): All forms necessary for taking and maintaining inventory control

- Receiving (incoming): Order printout/order guide and invoice to compare to the order, thermometer, pen/pencil, Vendor Checklist, inventory control sheet, Damaged or Discarded Product Log, obtain a credit receipt for missing or rejected products

- Storing (food, supplies, and chemicals): Inventory management checklist, inventory control sheet, receiving log, storeroom purchases and disbursements form

- Disbursements (outgoing): Production record/log, inventory control sheet, disbursement log, storeroom purchases, and disbursements form

- Tracking (in case of sickness or recall): Inventory control sheet with GTIN and Lot number of the product, storeroom purchases and disbursements form

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