FOOD SAFETY BASICS

2nd Edition



INSTITUTE OF child nutrition
RESOURCES • TRAINING • RESEARCH

Instructor's Manual

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2nd Edition

Instructor's Manual

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Key Area: 2

Code: Food Safety and HACCP 2600

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Institute of Child Nutrition
The University of Mississippi

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

PURPOSE

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

MISSION

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

VISION

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

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For more information, please contact helpdesk@theicn.org.

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Background Information

Instructor's Note: The purpose of this section is to help you become familiar with the context of the lesson. It is not a part of the lesson detail.

Welcome to the Institute of Child Nutrition (ICN)'s *Food Safety Basics*. ICN developed Food Safety Basics for school nutrition managers and employees to provide an understanding of best practices in food safety. This training enables them to learn and apply safe food handling practices. The *Food Safety Basics* Instructor's Manual assists trainers in providing this engaging face-to-face food safety training and skill development. This training incorporates food safety elements of the *Food Safety in Schools* course and training methods from *Foundations for Training Excellence*.

ICN designed this training to be interactive so that participants can be actively involved in learning food safety concepts to apply in their school nutrition programs. All school nutrition employees are responsible for food safety. This training provides tools to assist mangers and school nutrition staff in meeting this goal.

This training is 4 hours but can be taught as individual lessons, if needed. The Training-at-a-Glance shows the time requirements for teaching each lesson. Checklists provide school nutrition directors, trainers, and lead personnel with methods for teaching school nutrition staff and encouraging food safety practices.

This training consists of an introduction, four lessons, and the wrap up. Each lesson includes the following components:

- Lesson-at-a-Glance
- Lesson plan with learning activities
- Slide Presentation
- Handouts used in the lesson

The participants will be given a copy of *Manager's Corner: Food Safety Basics*, which provides training concepts that mangers may use for training purposes in their school nutrition programs. These concepts provide tools for ease in planning and conducting each training session.

The companion Participant's Workbook contains helpful information, activities, and informational sheets. This will become their "go to" handbook for food safety information. Not all the information in the Participant's Workbook may be covered but is available so participants have a resource to reference if they need further information about food safety. Participants will use this training and the tools provided to maintain a safe food environment in their school nutrition program.

The instructor's script is written with the following prompts:

SAY: This prompt indicates what the instructor is to say to participants. This content teaches the learning objectives.

ASK: This prompt indicates when the instructor should ask participants a question. If the question warrants feedback, it will be followed by the FEEDBACK prompt.

FEEDBACK: This prompt ensures certain elements are covered in discussions. This may include possible answers for instructors to give.

DO: This prompt explains what the instructor/participants are to do. This can be used to lead into activities, do demonstrations, show videos, or any other action that the instructor would need to know to do.

SHOW SLIDE: This prompt is used for showing slides.

Instructor's Note: This prompt provides information strictly for the instructor and should not be read aloud.

Title of Activity

Instructions: This provides instructions on what to do, how to perform the activity, and how to engage participants. Instructions can be personalized or amended to best meet the needs of the participants.

Instructor's Note: All handouts, except the pre- and post-assessments, needed for each lesson are included in the *Food Safety Basics* Participant's Workbook. There are several videos used in this course – these can be found on the *Food Safety Basics* landing page of the ICN website. Download the WMV or mp4 version of each video to your computer prior to beginning your training. Check to make certain each video projects correctly and that the audio is working. Lesson 2 requires ice and water for the calibrating thermometer activity. Arrange to have these accessible for this activity. The pre- and post-assessments are available at www.theicn.org.

You should print an additional copy of the Participant's Workbook for your own use during training.

Professional Standards

FOOD SAFETY AND HACCP TRAINING – 2600

Employee will be able to effectively utilize all food safety program guidelines and health department regulations to ensure optimal food safety.

2620–Practice general food safety procedures.

2630–Practice Federal, State, and local food safety regulations and guidance.

2640–Promote a culture of food safety behaviors in the school community.

Key Area Code: 2

Training Objectives

At the end of this training, participants will learn about the following topics:

- Demonstrate proper employee health and hygiene practices to avoid the contamination of food by employees and reduce the risk of foodborne illness outbreaks;
- Explain safe food temperatures necessary to ensure food safety in a school nutrition operation;
- Compare different methods of contamination and how to prevent food exposure to biological, chemical, and physical contaminants; and
- Comprehend the design of a school nutrition food safety program that incorporates HACCP principles, the Process Approach, and Standard Operating Procedures.

Ground Rules

The following are ground rules and expectations for this training:

1. Be in the classroom at least 5 minutes before scheduled starting time.
2. Be respectful of everyone.
3. Avoid side conversations.
4. Use cameras at appropriate times.
5. Consider ALL ideas.
6. Turn your mind on and your electronics off.

Key Terms

Key Terms	Definition
Hazard Analysis Critical Control Point (HACCP)	A specific approach for identifying food safety hazards that involves finding potential food safety issues in your program and implementing preventative measures.
National School Lunch Program (NSLP)	A federally assisted meal program operating in public and nonprofit private schools and residential child care institutions. The program was established under the National School Lunch Act, signed by President Harry Truman in 1946.
Safety Data Sheet (SDS)	Documents produced by a chemical manufacturer that contain information about the chemical such as physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical.
School Food Authority (SFA)	The governing body which is responsible for the administration of one or more schools; and has the legal authority to operate the Program therein or be otherwise approved by FNS to operate the Program.
Standard Operating Procedure (SOP)	Written best practices and procedures for producing safe food that address basic cleaning and sanitation programs and each step in the foodservice process (purchasing, receiving, storing, preparing, cooking, serving and holding, cooling, reheating, and transporting).
Time/Temperature Control for Safety Foods (TCS)	Foods that require control of time and temperature to limit pathogenic microorganism growth or toxin formation.

Training-at-a-Glance

Time	Topic	Materials
Introduction		
30 minutes	• Welcome • Intro to *Food Safety Basics* • Overview • Pre-Assessment	• Participant's Workbook • Pre-Assessment • Table tent • Pen or pencil • Sign-in sheet • Marker • Flip chart paper
Lesson 1: Employee Health and Good Personal Hygiene Practices		

60 minutes	• Proper Attire
	• Proper Handwashing
	• Do Not Work Sick
	• No Bare Hand Contact with Ready-to-Eat Foods
		• Participant's Workbook
		• Slide presentation
		• Marker
		• Flip chart paper
		• Painter's tape
		• *School Employee Health and Personal Hygiene* video mini-series
		  ▪ *Part 1: Reporting Illness*
		  ▪ *Part 2: Handling Illness*
		  ▪ *Part 3: Preventing Illness*
		• Computer to present slides and/or DVD and external speakers
		• Projector and screen
		• *Washing Hands to Prevent the Spread of Disease* video
		• *How to Properly Wash Your Hands* poster
		• *How to Properly Use Disposable Gloves* poster

Time	Topic	Materials
Lesson 2: Temperatures for Food Safety		
45 minutes	• Using Thermometers • Important Food Temperatures • Food Safety in the Food Process	• *Using Thermometers* video • Computer to present slides and/or DVD and external speakers • Projector and screen • Bi-metallic stemmed thermometer • Digital stemmed thermometer • Large container (2 quart) • Ice • Water
10 minutes	Break	
Lesson 3: Avoiding Contamination of Food		
30 minutes	• Types of Contamination of Food • Preventing Contamination of Food	• Flip chart paper • Markers
Lesson 4: Developing a Food Safety Program		
50 minutes	• HACCP • The Process Approach • Standard Operating Procedures (SOPs) and Logs	• Flip chart paper • Markers
Wrap Up		
15 minutes		• Flip chart paper • Markers • Post-Assessment • Pre-/Post-Assessment answer key • Certificates • Evaluations
Total Time: 240 minutes or 4 hours		

Preparation Checklist

Instructions: The following tasks are necessary for presenting this lesson. Assign each task to a specific person and determine the date that each task must be completed. Keep track of the progress by checking off tasks as they are completed. [Items may vary according to needs of particular lessons.] On the day of training arrive early to set up materials for each lesson, set up and test all equipment, and place participant materials on each table (pen, markers, note paper, table tents, page markers, index cards, and Participant's Workbook).

Task	Person Responsible	Completion Date	✔
Reserve equipment and gather supplies as needed for use on the day of class (6 weeks prior). • Instructor's Manual • Laptop with slide presentation, remote, and videos • External powered speakers (if not provided by site) • Ice • Water	Instructor		

List of equipment and supplies needed
• Slide presentation
• Marker
• Flip chart paper
• Painter's tape
• Name tents for each participant
• Sticky notes
• Computer to present slides and/or DVD and external speakers
• Projector and screen
• Pens or pencils
• *School Employee Health and Personal Hygiene* video mini-series
  ▪ *Part 1: Reporting Illness*
  ▪ *Part 2: Handling Illness*
  ▪ *Part 3: Preventing Illness*
• *Washing Hands to Prevent the Spread of Disease* video
• *How to Properly Wash Your Hands* poster
• *How to Properly Use Disposable Gloves* poster
• *Using Thermometers* video
• Bi-metallic stemmed thermometer
• Digital stemmed thermometer
• Large container (2 quart)
• Participant's Workbook
• *Manager's Corner: Food Safety Basics*
	ICN (if sponsored by ICN)		

Task	Person Responsible	Completion Date	✔
Agenda, sign-in sheet, roster of presenters/ participants, evaluations, and certificates **Pre- and Post-Assessments and Answer Sheet** (available at www.theicn.org)			

Room Set-up

- AV Set-up: projector, screen, speakers (for videos), presentation remote, flipchart/easel/markers, bike rack flipchart
- Classroom set-up (per attendee): Participant's Workbook, slide sets, name tents, pens, highlighters, other handouts provided (*Manager's Corner: Food Safety Basics*)
- For tables to share: sticky notes, markers
- Ice:
  - Does location have ice or does it need to be brought from hotel or home?
  - Need a thermal/cooler bag to store ice from home or hotel?
  - Do you need extra thermometers? Cups for participants to try calibration?

Trainer Quick Prep Tips

- **Lesson 1 – Proper Attire Activity:** Pull off and set aside blank flip chart paper for drawing stick figures (1 per team).
- **Lesson 1 – When to Wash Hands Activity:** Pull off and set aside blank flip chart paper (3 sheets on wall) for handwashing activity.
- **Lesson 1 – Protecting Ready-to-Eat Foods Activity:** Write the food preparation scenario on the top of the flip chart paper.
- **Lesson 2 – Temperature Danger Zone Drawing:** Draw outline of thermometer on flip chart paper.
- **Lesson 3 – Preventing Food Contamination Activity:** Write titles on the top of flip chart paper.
  - Hand-to-Food Cross Contamination
  - Food-to-Food Cross Contamination
  - Surface-to-Food Cross Contamination
  - Chemical Contamination (Chemical-to-Food)
  - Cross Contact (Allergen-to-Food)
- **Wrap Up – ABC Review Activity:** Make ABC's activity charts of flip chart paper (one per team).
- **Extra (optional)**
  - CDC Risk Factor signs (in *Mock Health Inspection Activity* book)
  - AFP food safety icons: www.foodprotection.org/resources/food-safety-icons/

Introduction

Time	Topic	Activity	Materials
Introduction			
30 minutes	Welcome and Introduction	• Getting to know you • Pre-Assessment • Overview of training	• Sign-in sheet • Participant's Workbook • Pre-Assessment • Table tent • Pen or pencil
Total Time: 30 minutes			

SHOW SLIDE: *Food Safety Basics*

SAY: Welcome to *Food Safety Basics*. This training is provided today by (state the organization sponsoring the training). The Institute of Child Nutrition designed *Food Safety Basics* to train school nutrition staff in current best practices of food safety, including the newest Food and Drug Administration (FDA) *Food Code* and the *Food-Safe Schools Action Guide* by the United States Department of Agriculture (USDA). This training provides the what, why, and how of food safety to encourage you to adopt these best practices. It also provides opportunities to exercise and apply these food safety practices to school nutrition settings. These practices can help reduce the risk of foodborne illness outbreaks in school nutrition programs.

SHOW SLIDE: *Overview*

SAY: At the end of this training, you will know the basics of food safety, including employee health and good personal hygiene practices, important food temperatures, methods of preventing contamination of food, and steps for developing a food safety program. You will have the tools for basic practices and understand why maintaining food safety is important in your school nutrition program.

SHOW SLIDE: *Getting to Know You Activity*

ACTIVITY: *Getting to Know You*

Instructions: Have each participant take a table tent and a marker from the center of the table. Fold the table tent in half. Write their first name on one side of the table tent. On the other side, they will answer the following question: Why is food safety a top priority for school nutrition programs? Participants will go around the room, introduce themselves, and state their answers to the question. Give the participants 5 minutes to complete this activity. Write the question on the top of the flip chart paper. Write down participant answers as they say them.

SAY: We are going to start by getting to know each other. Please take your table tent and fold it in half. Using a marker, write your first name on one side, and on the other side, answer this question: Why is food safety a top priority for school nutrition programs? Please walk around the room, introduce yourself to someone, and let them know your answer to the question.

DO: Give participants 3 minutes to complete this activity. Take 2 minutes and ask some participants to share their answers. Write participant answers and review them.

SAY: I hope you have enjoyed getting to know one another. I am going to go through some of the logistics for today.

Posted on the walls are ground rules for the day. It is important that we follow these rules throughout the training day. Restrooms are located (give location for restrooms). We will take a break mid-way through the training. In the center of the table, you will find a Participant's Workbook. Please place your name on the cover. We will use this workbook throughout the training, and it will serve as an excellent resource for you when you return to your school nutrition program.

On the easel, I have flip chart paper with the heading – Bike Rack. As we discuss food safety, if you have additional questions on a topic, you can write them down on the Bike Rack, or you can write them on a sticky note and put them here. Before we finish the training, I will review the Bike Rack and answer any questions not previously addressed.

In school nutrition, you are responsible for the food you prepare and serve. Today we will review the basics of food safety so you know why you use safe food handling practices. Your responsibility is to maintain good food safety standards throughout all the steps of the food process – from the time food first enters your school to when you serve, store, or discard the food.

SHOW SLIDE: *Pre-Assessment*

ACTIVITY: *Pre-Assessment*

Instructions: Hand each participant a pre-assessment. Ask each participant to complete the pre-assessment. Have each participant place a code at the top of the first page. They will place this same code on their post-assessment. The participants will have 5-8 minutes to complete. Collect pre-assessments as participants finish.

SAY: We are now going to complete a pre-assessment to find out what you already know about the basics of food safety. Please do not write your name on the assessment, instead write some kind of identifier in the top right corner. Identifiers can be the last four (4) digits of your phone number, a favorite word, etc. Please remember your identifier so you can use it later on your post-assessment. Answer the questions to the best of your ability. We will go over the content during the training, and we will review the answers at the end. This activity should take about 5-8 minutes and is to be done individually.

DO: Give participants 5 minutes to complete the pre-assessment. Collect pre-assessments.

Lesson 1: Employee Health and Good Personal Hygiene Practices

LESSON-AT-A-GLANCE

Time	Topic	Activity	Materials
Introduction			
<5 minutes	Lesson Objectives		
Objective: Discuss the importance of good personal hygiene practices.			
10 minutes	Good personal hygiene practices	Proper Attire	• Flip chart paper • Markers
Objective: List symptoms and illnesses employees should report to their manager or director to prevent the spread of foodborne illness.			
20 minutes	Not working when sick	Employee Health and Personal Hygiene Video Series	• *School Employee Health and Personal Hygiene* video mini-series ▪ *Part 1: Reporting Illness* ▪ *Part 2: Handling Illness* ▪ *Part 3: Preventing Illness* • Computer to present slides and/or DVD and external speakers • Projector and screen
Objective: Demonstrate the proper handwashing procedure to effectively reduce contaminants on the hands.			
5 minutes	How to properly wash your hands	Steps for Effective Handwashing	• *Washing Hands to Prevent the Spread of Disease* video • Computer to present slides and/or DVD and external speakers • Projector and screen • *How to Properly Wash Your Hands* poster
Objective: Explain when to wash hands to prevent transmitting microorganisms.			
10 minutes	When to wash hands	When to Wash Hands	• Flip chart paper • Markers

Time	Topic	Activity	Materials
Objective: Explain how using utensils and single-use gloves to prevent bare hand contact with ready-to-eat foods reduces the risk of foodborne illness outbreaks.			
10 minutes	No bare hand contact with ready-to-eat foods	Protecting Ready-to-Eat Foods	• *How to Use Disposable Gloves Properly* Poster • Flip chart paper • Markers
Conclusion			
<5 minutes			
Total Time: 60 minutes			

Instructor's Note: For times marked <5 minutes, this means that the section is very short and has very little effect on overall time. For the total time calculation, sections with <5 minutes were combined together for 5 minutes (<5 minutes + <5 minutes = 5 minutes of time).

Lesson 1: Employee Health and Good Personal Hygiene Practices

Introduction

SHOW SLIDE: *Lesson 1: Employee Health and Good Personal Hygiene Practices*

SAY: Food safety is a critical part of a school nutrition employee's job. It is the responsibility of every school nutrition employee to ensure the safety of food served to children at school.

The Child Nutrition Reauthorization Act of 2004 implemented the requirement for a food safety program based on Hazard Analysis and Critical Control Point (HACCP) principles for school nutrition programs. Since that time, we have developed, trained on, and implemented important policies and procedures that focus on providing safe food. An important first step starts with the staff — employee health and good personal hygiene practices.

DO: Refer participants to the lesson objectives in the Participant's Workbook.

SAY: After this lesson, you will be able to

- discuss the importance of good personal hygiene practices,
- list symptoms and illnesses employees should report to their manager or director to prevent the spread of foodborne illness,
- demonstrate the proper handwashing procedure to effectively reduce contaminants on the hands,
- explain when to wash hands to prevent transmitting microorganisms, and
- explain how using utensils and single-use gloves to prevent bare hand contact with ready-to-eat foods reduces the risk of foodborne illness outbreaks.

Objective: Discuss the importance of good personal hygiene practices.

SHOW SLIDE: *It All Begins With Personal Hygiene*

SAY: Personal hygiene is important in reducing the incidence of foodborne illness in school nutrition programs. Foodborne illness may be due to microorganisms such as bacteria, viruses, parasites, and mold, or chemicals, toxins, and metals. A foodborne illness outbreak occurs when two or more people become ill with the same illness from contaminated food or beverage. Good personal hygiene practices reduce the risk of employees contaminating food. All school nutrition employees are responsible for their own personal hygiene. This begins with wearing the proper attire to work. Being properly dressed reduces the chance that an employee will accidentally contaminate food.

ASK: What are some ways an employee who is **not** properly dressed could contaminate food?

FEEDBACK:

- Hair in the food
- Wearing an apron in the bathroom and then getting those germs on the food
- Fingernail polish in food
- Jewelry could fall off into food

SAY: It is important that all employees start off the day dressed correctly.

SHOW SLIDE: *Proper Attire Activity*

ACTIVITY: *Proper Attire*

Instructions: Divide the class into four groups. Give each group flip chart paper and a set of markers. Have the participants draw a stick figure and then dress the stick figure correctly for work. For example, the stick figure should have a hair restraint – like a hair net, a clean apron, and closed toed shoes (although not food safety, this is still part of proper attire). Refer participants to the **Personal Hygiene** handout in their Participant's Workbook for ideas. Then ask the groups to label the different articles the employee is wearing. Have the first group present two items their employee is wearing. Ask the following group(s) to present two more, or elaborate on an item already mentioned. This activity should take 10 minutes (5 minutes to draw and 5 minutes to report out).

SAY: Please first turn in your workbook to the **Personal Hygiene** handout. You can use this handout to assist you with the activity we are about to do. I am going to count you off into four groups. Each group will be given a piece of flip chart paper and a set of markers. I want you to draw a stick figure, and dress this stick figure to work in a kitchen. For example, your stick figure will need some kind of hair restraint, like a hair net. After you have dressed your stick figure, I want you to label the different parts of the outfit.

Personal Hygiene

Introduction

Good personal hygiene is a basic requirement for implementing a food safety program. All school nutrition employees must follow the personal hygiene Standard Operating Procedures written for their school nutrition program.

Here Are the Facts

Research conducted by the U.S. Food and Drug Administration (FDA) shows that personal hygiene practices are often poor in retail foodservice establishments, which includes schools, hospitals, nursing homes, and restaurants*. Poor personal hygiene is a risk factor that must be controlled in all types of foodservice operations.

Application

- Report to work in good health, clean, and dressed in clean attire.
- Change apron when it becomes soiled.
- Wash hands properly, frequently, and at the appropriate times.
- Keep fingernails trimmed, filed, and maintained.
- Keep fingernails short and without artificial nails or nail polish.
- Do not wear any jewelry except for a plain ring such as a wedding band.
- Treat and bandage wounds and sores immediately. When hands are bandaged, single-use gloves must be worn.
- Report any illness to your manager.
- Cover any lesion containing pus with a bandage. If the lesion is on a hand or wrist, cover with an impermeable dressing such as a finger cot or stall and a single-use glove.
- Eat, drink, or chew gum only in designated break areas where food or food contact surfaces may not become contaminated.
- Wear hairnet, hat, or cap while in the kitchen.

- Taste food the correct way:
  - Place a small amount of food into a separate container.
  - Step away from exposed food and food contact surfaces.
  - Use a teaspoon to taste the food. Remove the used teaspoon and container to the dish room. Never reuse a spoon that has already been used for tasting.
  - Wash hands immediately.

Remember, follow state or local health department requirements.

*U.S. Food and Drug Administration. (2009) *FDA report on the occurrence of foodborne illness risk factors in selected institutional foodservice, restaurant, and retail food store facility types.* Retrieved from http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/FoodborneIllnessRiskFactorReduction/ucm224321.htm

DO: Give participants 5 minutes to draw the stick figure. Make sure to walk around, answer any questions, and provide positive feedback.

SAY: Good job! Now each group will pick a spokesperson. I want you to tell us about two items that your figure is wearing and why is it important for food safety.

DO: Give 5 minutes for participants to report out. Elaborate on any pieces of the outfit as needed. Possible answers:

- Hair restraint: Prevents hair from getting into food.
- Short, trimmed fingernails: Prevents fingernails from getting into food.
- Fingernails free of artificial nails and polish: Prevents fake nails and nail polish from getting into the food.
- Clean apron: Prevents microbes and allergens on other foods from getting into food.
- Plain wedding band only: Prevents jewelry and jewels from falling into food; also difficult to thoroughly clean and could harbor pathogens.
- Clean clothes: Prevents microbes, dirt, and other particles from employees from getting into food.
- Properly bandaged arm: Prevents germs from infected cut from getting into food.
- Single-use gloves: Prevents employees from touching ready-to-eat foods (not needed if employee is not handling ready-to-eat foods unless otherwise specified by local or state regulations).
- Closed-toed, non-slip shoes: Not a food safety concern, but an important part of the attire since they protect employees' feet from potential falling items and from slipping in the kitchen.

SAY: Starting the workday properly dressed is only the beginning of good employee health and hygiene practices.

ASK: What are some other personal hygiene practices that employees must do to ensure they do not contaminate food?

SAY: You can use the **Personal Hygiene** handout for some ideas.

FEEDBACK:

- Only eat, drink, or chew gum in designated areas.
- Use correct steps to taste food.

- Wash hands properly.
- Do not touch ready-to-eat foods with bare hands.
- Do not come to work sick.
- Properly bandage wounds on arms or hands.

Instructor's Note: Say any items on the FEEDBACK list not mentioned by the class.

SAY: Yes, good answers. The FDA's *Employee Health and Personal Hygiene Handbook* discusses three interventions that can help prevent the spread of foodborne illness: restricting and excluding ill employees, properly washing hands, and preventing bare hand contact with ready-to-eat foods. It is important for employees to follow all good personal hygiene and employee health procedures. The FDA identified personal hygiene as one of the areas where employees often do not comply with proper practices. By following practices like using good handwashing procedures, eliminating bare hand contact with ready-to-eat-foods, and reporting illness to your manager or director, you can prevent the spread of foodborne illness. We will now discuss these personal hygiene practices further.

Objective: List symptoms and illnesses employees should report to their manager or director to prevent the spread of foodborne illness.

SHOW SLIDE: *Don't Work Sick*

SAY: Preventing foodborne illnesses and outbreaks is the responsibility of all school nutrition employees. Working when ill is a poor personal hygiene practice because it exposes other school nutrition staff and the children served to the illness. It is important that you communicate to your manager or director if you feel ill.

We are going to watch a series of three videos showing a scenario of a foodborne illness outbreak. As you will see in this mini-series, an ill employee can be detrimental to school nutrition staff and the children they serve. I want you to pay attention to what is happening at the school. Key points from the video are in your Participant's Workbook so there is no need to take notes.

ACTIVITY: *Employee Health and Personal Hygiene Video Series*

Instructions: The trainer will show all three parts of the video mini-series, stopping in between each part to ask discussion questions. The questions and their possible answers are listed here. The questions and answers reflect the key points from the video mini-series and are in the **Employee Health and Personal Hygiene Videos Key Points** handout in the Participant's Workbook. Participants do not need to write anything down and should be encouraged to focus on the videos. These key points are in the Instructor's Manual in the form of discussion questions and answers for each video. This activity will take about 15 minutes.

SHOW SLIDE: *School Employee Health and Personal Hygiene: Reporting Illness*

DO: Show the first video of the series *School Employee Health and Personal Hygiene Video Mini-Series Part 1: Reporting Illness*. After showing the video, ask participants the following discussion questions.

ASK: What did Chris do correctly?

FEEDBACK:

- She reported her symptoms to her supervisor.
- She did not come to work.

ASK: What symptoms should you report to your supervisor?

FEEDBACK:

- Diarrhea
- Vomiting
- Sore throat with fever
- Infected wound or boil on hands or arms
- Jaundice (yellowing of the skin and eyes)
- Diagnosis of or exposure to a foodborne illness

ASK: What are the Big 6 foodborne pathogens?

FEEDBACK:

- Norovirus
- *Salmonella*
- *Salmonella* Typhi
- *E. coli*
- *Shigella*
- Hepatitis A

SAY: Good! Now, we will watch the second part of the video series. Once again, please pay attention to the video.

SHOW SLIDE: *School Employee Health and Personal Hygiene: Handling Illness*

DO: Show the second video of the series *School Employee Health and Personal Hygiene Video Mini-Series Part 2: Handling Illness*. After showing the video, ask participants the following discussion questions.

ASK: Discussion questions for *Part 2: Handling Illness*

What is the difference between being excluded and restricted from work?

FEEDBACK:

- Exclusion means a school nutrition employee is not permitted to work in or enter a food preparation site. This requirement applies to areas where food is received, prepared, stored, packaged, served, vended, transported, or purchased.
- Restriction means a school nutrition employee's activities are limited to prevent the risk of transmitting a disease through food. A restricted employee cannot handle exposed food; clean equipment, utensils, linens; or unwrapped single-service or single-use articles.

ASK: What symptoms require exclusion from work?

FEEDBACK:

- Vomiting
- Diarrhea
- Jaundice
- Diagnosed with one of the Big 6 foodborne pathogens
- Sore throat with fever if working with a highly susceptible population (e.g. preschool age children, immunocompromised people, or older adults)

ASK: What symptoms require restriction at work?

FEEDBACK:

- Sore throat with fever if **not** working with a highly susceptible population (i.e. preschool age children, immunocompromised people, or older adults)
- Open wounds or cuts on the hands or arms that are not properly covered

ASK: What are some jobs that can be performed under restriction?

FEEDBACK:

- Cashier
- Stocking canned or packaged food products
- Cleaning and maintenance outside of production kitchen

SAY: Good! Now, we will watch the final part of the video series.

SHOW SLIDE: *School Employee Health and Personal Hygiene: Preventing Illness*

DO: Show the third video of the series *School Employee Health and Personal Hygiene Video Mini-Series Part 3: Preventing Illnes*s. After showing the video, ask participants the following discussion questions.

ASK: Discussion questions for *Part 3: Preventing Illness*

- What are the employee's incorrect actions that contributed to the foodborne illness outbreak?

FEEDBACK:

- She did not report her symptoms of illness to her supervisor.
- She wore her apron in the bathroom.
- She did not wash her hands properly after throwing up in the restroom.
- She wiped her hands on her apron.
- She double gloved her hands.
- She sneezed into her gloves, did not throw her gloves away, wash her hands, or put on a new pair of gloves.
- She sneezed over the food.
- She wiped her face with a towel and then used that towel to clean a scoop.

ASK: What are some ways to prevent a foodborne illness?

FEEDBACK:

- Report symptoms to your supervisor.
- Exclude or restrict employees based on symptoms.
- Wash hands properly and at proper times.
- No bare hand contact with ready-to-eat foods.
- Replace gloves when they become dirty or when switching tasks.
- Protect an infected cut or wound with a bandage and a single use glove.

SAY: As you saw in the videos, the ill employee did not follow employee health and personal hygiene best practices, which resulted in a foodborne illness outbreak in the school. It is important to report illness to your manager or director, and they will determine if the school nutrition employee is excluded or restricted from work. The key points from the video series are in the **Employee Health and Personal Hygiene Videos Key Points** handout in your Participant's Workbook so you can remember all that we discussed.

In your Participant's Workbook, there is the **Common Foodborne Illnesses** handout. Please take a second and turn to this page. We will not cover this chart during today's training, but ICN provided it for you as a resource for use in your school. This chart lists the six, foodborne pathogens along with other microorganisms of which school nutrition programs need to be aware. The chart also provides symptoms for these different microorganisms, where they can be found, and methods for preventing them. Use this chart as a resource to learn more about these microorganisms.

Common Foodborne Illnesses

Symptoms	Where Microorganism Can Be Found or "Common Source"	Prevention Strategies
Shiga toxin-producing *Escherichia coli* 0157:H7		
Symptoms begin 3–8 days after eating contaminated food, can last 2–9 days, and include: • cramping, • diarrhea (watery or bloody), • vomiting, and • hemolytic uremic syndrome (hus).	• Intestinal tract of animals, particularly cattle and humans • Raw or undercooked ground beef • Raw milk or dairy products • Unpasteurized apple cider or juice • Imported cheeses • Dry salami • Uncooked fruits and vegetables	• Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all poultry and meat to correct internal temperature, and confirm with a thermometer. • Use only pasteurized milk, dairy products, or juices. • Wash all produce in cold, running water. • Cool foods properly.
Salmonellosis *Salmonella spp.* (Nontyphoidal Salmonella)		
Symptoms begin 6–48 hours after eating contaminated food, last 1–2 days, and include: • stomach cramps, • headache, • nausea, • fever, • diarrhea, • vomiting, and • severe dehydration (infants and elderly).	• Raw meats and poultry • Milk and dairy products • Fish and shrimp • Sauces and salad dressings • Cake mixes • Cream-filled desserts and toppings • Peanut butter • Cocoa and chocolate • Sliced fresh fruits and vegetables such as melons, strawberries, or tomatoes • Raw sprouts	• Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all foods to correct internal temperature and confirm with a thermometer. • Hold hot foods at 135 ºF or above. • Cool foods properly.

Symptoms	Where Microorganism Can Be Found or "Common Source"	Prevention Strategies
***Salmonella* Typhi (Typhoid Fever)**		
Symptoms usually begin in 1–3 weeks, but may show as long as 2 months after exposure. Symptoms include: • high fever, • stomach pain, • diarrhea or constipation, • aches, • headaches, • fatigue, • loss of appetite, and • rash of flat, rose-colored spots.	• Intestinal tract of humans • Untreated or fecal-contaminated water or ice • Raw fish, meats, and poultry • Unpasteurized milk and dairy products • Raw vegetables, fresh fruit, and salads washed with untreated or sewage-contaminated water	• Follow handwashing guidelines. • Avoid bare hand contact with ready-to-eat foods. • Report symptoms of diarrhea and vomiting and diagnosis of or exposure within the past 14 days to others with typhoid fever to your immediate supervisor. Do not work when you have these symptoms. • Use potable (clean) water for handwashing, cleaning, and sanitizing food contact surfaces and washing produce. • Ensure all foods are purchased from a safe supplier. • Cook all foods to correct internal temperature and confirm with a thermometer.
***Shigella spp.* (Shigellosis)**		
Symptoms begin 12–50 hours after eating contaminated food, last up to 2 weeks, and include: • abdominal pain, • diarrhea containing blood/mucus, • fever, • nausea, • vomiting, • chills, • fatigue, and • dehydration.	• Intestinal tract of humans • Polluted water; spread by flies and food handlers • Meat salads • Potato and pasta salads • Lettuce and other raw vegetables • Milk and dairy products • Ready-to-eat foods	• Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Use water from approved sources. • Control flies. • Maintain storage temperatures. • Cool foods properly.

Symptoms	Where Microorganism Can Be Found or "Common Source"	Prevention Strategies
Norovirus (Norwalk and Norwalk-Like Viral Agents)		
Symptoms begin 1–2 days after ingesting contaminated food or water and include: • nausea, • vomiting, • diarrhea, • abdominal pain, • headache, and • mild fever.	• Contaminated drinking water • Shellfish from contaminated water • Raw vegetables, fresh fruit, and salads contaminated by dirty hands	• Practice good personal hygiene. • Follow procedures to avoid cross contamination. • Wash all fresh produce to be served whole, peeled, or cooked, in cold, running water. • Use water from approved sources. • Obtain shellfish from approved, health-inspected sources, and cook thoroughly. • Cook all foods to required internal temperatures, and confirm with a thermometer.
Hepatovirus (Hepatitis A)		
Symptoms begin 10 days up to almost 2 months after ingesting contaminated food or water and include: • fever, • fatigue, • headache, • nausea, • loss of appetite, • vomiting, • stomach pain, and • later jaundice (yellow skin and eyes).	• Intestinal tract of humans • Human urinary tract • Contaminated water • Foods contaminated by food handlers, processing plants, or foodservice facilities • Foods of particular concern – prepared foods requiring no additional cooking: deli meats, salads, sandwiches, fruit and fruit juices, milk and dairy products, raw fruits and vegetables	• Practice good personal hygiene. • Follow procedures to avoid cross contamination. • Wash all fresh produce to be served whole, peeled, or cooked, in cold, running water. • Use water from approved sources. • Cook all foods to the required internal temperature, and confirm with a thermometer.

Symptoms	Where Microorganism Can Be Found or "Common Source"	Prevention Strategies
***Clostridium botulinum* (Botulism)**		
Symptoms begin 18–36 hours after eating contaminated food and include: • diarrhea or constipation; • weakness; • dizziness; • double vision or blurred vision; • difficulty speaking, swallowing, or breathing; and • paralysis.	• Home-canned foods • Improperly processed foods • Sausages and meats • Canned low-acid foods, such as certain vegetables • Untreated garlic in oil • Leftover, unrefrigerated, foil-wrapped baked potatoes • Sautéed onions in butter sauce	• Discard damaged cans. • Do not use home-canned foods in a foodservice establishment. • Do not mix and store oil and garlic. • Follow rules for time and temperature control. • Sauté onions as needed. Do not sauté and store unrefrigerated for later use. • Do not store leftover baked potatoes in foil wrapping. Unwrap and chill correctly. • Cool foods properly.
***Campylobacter jejuni* (Campylobacteriosis)**		
Symptoms begin 2–5 days after eating contaminated food, can last 7–10 days, and include: • diarrhea (watery or bloody), • fever, • nausea and vomiting, • abdominal pain, • headache, and • muscle pain.	• Unpasteurized milk and dairy products • Raw poultry • Raw beef • Non-chlorinated or fecal-contaminated water • Birds and flies can carry and contaminate food	• Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all poultry, meat, and other foods to appropriate internal temperature and confirm with a thermometer. • Maintain good pest control. • Use only pasteurized dairy products. • Use water from approved sources.

Symptoms	Where Microorganism Can Be Found or "Common Source"	Prevention Strategies
Clostridium perfringens		
Symptoms begin 8–24 hours after eating contaminated food, last 24 hours, and include: • abdominal cramping and • diarrhea.	• Intestinal tracts of humans and animals • Cooked meat and poultry • Gravy • Beans	• Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all foods to correct internal temperature and confirm with a thermometer. • Hold hot foods at 135 °F or above. • Cool foods properly.
Listeria monocytogenes **(Listeriosis)**		
Symptoms begin 3–70 days after eating contaminated food; 21-day onset is most common. Symptoms include: • sudden onset of fever, • muscle aches, • diarrhea or vomiting, • headaches, • stiff neck, • confusion, • loss of balance, and • convulsions.	• In soil, ground water, plants, and intestinal tracts of humans and animals • Unpasteurized milk and cheese • Ice cream • Raw vegetables • Raw and cooked poultry • Raw meat and fish • Prepared and chilled ready-to-eat foods • Deli meats, luncheon meats, hot dogs • Soft cheese such as feta, Brie, and Mexican-style cheeses	• Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all poultry and meat to correct internal temperature and confirm with a thermometer. • Use only pasteurized milk, dairy products, or juices. • Wash all fresh produce in cold, running water. • Clean and sanitize food contact surfaces. • Maintain proper food temperatures.

SHOW SLIDE: *Prevent Foodborne Illness*

SAY: We learned that an employee's symptoms determine whether the manager or director needs to exclude or restrict that employee. Practicing good personal hygiene by communicating symptoms of illness and following food safety policies and procedures is necessary to maintain a safe food environment. It is important that you communicate to your manager or director if you feel ill. To recap, symptoms you should report include

- vomiting;
- diarrhea;
- sore throat with fever;
- jaundice (yellowing of skin and eyes);
- any exposed boil or infected, pus-containing wounds or cuts on the hands or arms;
- illness diagnosed by a medical provider;
- exposure by eating or preparing food that caused a foodborne illness outbreak; or
- exposure by residing with a person diagnosed with a foodborne illness.

Preventing foodborne illness and an outbreak is the responsibility of all school nutrition employees. We will now discuss one of the most important methods of preventing the spread of a foodborne illness – handwashing.

Objective: Demonstrate the proper handwashing procedure to effectively reduce contaminants on the hands.

SAY: Handwashing is one of the most important practices for school nutrition employees. Knowing the proper steps in the handwashing process is extremely important. We are going to watch a short video showing the proper steps.

ACTIVITY: *Steps for Effective Handwashing*

Instructions: Show the *Handwashing to Prevent the Spread of Disease* video. After the video, ask a volunteer to come up to the front. Have the participants walk the volunteer through the steps for proper handwashing with the volunteer demonstrating the steps as instructed. This activity should take 5 minutes.

SHOW SLIDE: *Handwashing to Prevent the Spread of Disease*

DO: Show video.

SAY: This video provided a quick look at how to wash your hands. Would someone please volunteer and come up to the front of the class? I am going to ask the class to repeat the steps in order for effective handwashing. Our volunteer will demonstrate the steps for us as instructed by the class. The steps are also available in the **Washing Hands SOP (Sample)** handout in your Participant's Workbook.

Washing Hands SOP (Sample)

PURPOSE: To prevent foodborne illness by contaminated hands.

SCOPE: This procedure applies to anyone who handles, prepares, and serves food.

KEY WORDS: Handwashing, Cross Contamination

INSTRUCTIONS:

1. Train school nutrition employees on using the procedures in this SOP.
2. Follow state or local health department requirements.
3. Post handwashing signs or posters in a language understood by all school nutrition employees near all handwashing sinks, in food preparation areas, and restrooms.
4. Use designated handwashing sinks for handwashing only. Do not use food preparation, utility, and dishwashing sinks for handwashing.
5. Provide warm running water, soap, and a means to dry hands. Provide a waste container at each handwashing sink or near the door in restrooms.
6. Keep handwashing sinks accessible anytime employees are present.
7. Wash hands:
    - Before starting work
    - During food preparation
    - When moving from one food preparation area to another
    - Before putting on or changing gloves
    - After using the toilet
    - After sneezing, coughing, or using a handkerchief or tissue
    - After touching hair, face, or body
    - Eating, drinking, or chewing gum
    - After handling raw meats, poultry, or fish
    - After any clean up activity such as sweeping, mopping, or wiping counters
    - After touching dirty dishes, equipment, or utensils

Washing Hands SOP (Sample), continued

- After handling trash
- After handling money
- After any time the hands may become contaminated

8. Follow proper handwashing procedures as indicated below:
   - Wet hands and forearms with warm, running water at least 100 °F and apply soap.
   - Scrub lathered hands and forearms, under fingernails, and between fingers for at least 10-15 seconds. Rinse thoroughly under warm running water for 5-10 seconds.
   - Dry hands and forearms thoroughly with single-use paper towels.
   - Dry hands using a warm air hand dryer.
   - Turn off water using paper towels.
   - Use paper towel to open door when exiting the restroom.
9. Follow FDA recommendations when using hand sanitizers. These recommendations are as follows:
   - Use hand antiseptics, also called hand sanitizers, only after hands have been properly washed and dried.
   - Use only hand sanitizers that comply with the FDA *Food Code*. Confirm with the manufacturers that the hand sanitizers used meet these requirements.
   - Use hand sanitizers in the manner specified by the manufacturer.

MONITORING:

1. A designated employee will visually observe the handwashing practices of the school nutrition employees during all hours of operation.
2. The designated employee will visually observe that handwashing sinks are properly supplied during all hours of operation.

CORRECTIVE ACTION:

1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. Ask employees that are observed not washing their hands at the appropriate times or using the proper procedure to wash their hands immediately.
3. Retrain employee to ensure proper handwashing procedure.

Washing Hands SOP (Sample), continued

VERIFICATION AND RECORD KEEPING:

The school nutrition manager will complete the Food Safety Checklist daily to indicate that monitoring is being conducted as specified. 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**: _____

DO: Have a volunteer come up. Ask the participants for each of the steps, and have the volunteer demonstrate the step. Make sure to praise the volunteer and thank them for their help. The steps of effective handwashing are:

1. Use soap and running water.
2. Lather hands with soap up to elbows and scrub for 10–15 seconds.
3. Wash backs of hands, wrists, between fingers, and under fingernails.
4. Rinse hands under running water.
5. Dry hands with paper towel, or air dryer.
6. Turn off water with paper towel, and use the paper towel to open the door before discarding.

Locate the *How to Properly Wash Your Hands* poster in the toolbox materials.

SAY: ICN has many resources to help you remember how to wash your hands properly. The *How to Properly Wash Your Hands* poster provides both written and visual reminders to practice effective handwashing. This poster is available for download for free on the ICN website.

DO: Pass the poster around so participants can look at it as you move on with the lesson.

Objective: Explain when to wash hands to prevent transmitting microorganisms.

SHOW SLIDE: *Washing Hands*

SAY: Now that we have reviewed the proper steps for effective handwashing, we need to discuss when we should wash our hands during our busy day in school nutrition. It is important to wash your hands at the appropriate times. Please turn in your Participant's Workbook to the **Washing Hands SOP (Sample)**. Standard Operating Procedures (SOPs) are an important part of a food safety program, as they detail the steps needed to ensure food is safe throughout the foodservice process. We will discuss SOPs more in Lesson 4.

ACTIVITY: *When to Wash Hands*

Instructions: Divide the group into three groups. Provide each group with flip chart paper and a different color marker. Give the groups 3 minutes to write down as many situations in which an employee should wash their hands. After 3 minutes, have the groups rotate once. The groups will read over each other's flip charts and add any situations the original group may have missed or add a star next to situations they find important. The groups will have 2 minutes for this portion of the activity. Refer participants to the **Washing Hands SOP (Sample)** handout in their Participant's Workbook if they need ideas. Rotate the groups one more time and repeat the same procedure. Have the groups return to their original flip chart papers. Have them read over the added situations and report out on one situation they found interesting. This activity should take 10 minutes.

Instructor's Note: For larger groups (>24 people), divide the room into 6 groups. Still have the groups only rotate 2 times.

SAY: I am going to break you into three groups. Each group has a flip chart paper and a marker. You will have 3 minutes to write down as many situations in which you should wash your hands. For example, you should wash your hands after you use the restroom. If you need ideas, you can refer to the **Washing Hands SOP (Sample)** handout in your Participant's Workbook.

DO: Divide the group into 3 groups and give them 3 minutes to complete their task.

SAY: Now, you will rotate to your right, and take your marker with you. I want you to read over the group's list and add situations to it. If you cannot think of any ideas, put a star next to a situation where you believe it is very important to wash your hands.

DO: Allow the groups 2 minutes to add to the list.

SAY: Alright now, rotate to your right again. You will do the same thing for this list. Once again, if you need ideas, you can refer to the **Washing Hands SOP (Sample)** handout in your Participant's Workbook.

DO: Allow the groups 2 minutes to add to the list.

SAY: Please return to your original flip chart paper. Read over the added situations. Please report on a situation you find interesting or important.

FEEDBACK:

When to wash hands:

- Whenever hands are soiled
- Before beginning food preparation
- Before putting on disposable gloves
- Before serving customers
- After breaks
- After using the restroom (and again in the kitchen handwashing sink)
- After eating, drinking, or chewing gum
- After using the telephone
- After using a handkerchief or tissue
- After handling inventory
- After handling raw food
- After touching or scratching areas of the body, such as ears, mouth, nose, or hair
- After coughing or sneezing
- After clearing or cleaning tables
- After clearing, scraping, or washing dirty plates or utensils
- After handling garbage
- After handling money on the cafeteria line
- After touching dirty aprons, clothing, or surfaces
- After using chemicals

SAY: Good answers everyone! Proper handwashing is important to keep food safe at all times. It is the most effective method for cleaning your hands.

Objective: Explain how using utensils and single-use gloves to prevent bare hand contact with ready-to-eat foods reduces the risk of foodborne illness outbreaks.

SHOW SLIDE: *Preventing Bare Hand Contact with Ready-to-Eat Foods*

SAY: Along with properly washing your hands, avoiding bare hand contact with ready-to-eat foods is important to prevent the spread of foodborne illness. Ready-to-eat foods are foods eaten without further rinsing or cooking, such as cut fruits and vegetables, sandwiches, and cheese. This means there is no further kill step used on the food to eliminate any microorganisms that may be on an employee's hands. The *Food Code* requires that ready-to-eat foods be protected from contamination by employee hands. Single-use (disposable) gloves or utensils provide a barrier between bare hands and ready-to-eat foods as an additional defense against contamination.

ASK: What are some ready-to-eat foods served in schools?

FEEDBACK: fresh fruits, salad bar, sandwiches

SAY: Handwashing and proper glove use are important for maintaining food safety throughout all steps of the food process. Proper glove use prevents food from being contaminated by the employee; therefore, gloves used in foodservice protect the food, not the employee. An important step in proper glove use is to wash hands before putting them on so as not to contaminate the outside of the gloves with any microorganisms that may be on the hands. Employees can wash fresh whole produce with bare hands, but during preparation and service, there should be no bare hand contact. You can also use a variety of utensils to avoid touching food.

ASK: What are some ways to prevent bare hands contact with ready-to-eat foods?

FEEDBACK:

- Tongs
- Spoons
- Ladles
- Scoops
- Spoodles
- Deli tissue
- Package some products for individual service

SAY: Great answers! Your responsibility for keeping food safe requires eliminating bare hand contact with ready-to-eat foods during preparation and service.

DO: Locate the *How to Properly Use Disposable Glove*s poster in the toolbox materials. Place the poster somewhere easy for the participants to see.

SAY: Another resource the ICN provides is the *How to Properly Use Disposable Glove*s poster. Like the handwashing poster I presented earlier, this poster gives both written and visual directions on proper glove use. This poster is also available free to download on the ICN website at www.theicn.org/safesummermeals.

ASK: What are some best practices when using disposable gloves?

FEEDBACK:

- Wash hands before putting on gloves.
- Wear gloves when preparing and serving ready-to-eat foods.
- Change gloves frequently and between tasks.
- Never handle money and food while wearing the same pair of gloves.
- Never re-use or wash gloves.
- Change gloves and wash hands after sneezing, wiping nose, touching hair, or other contact with germs.
- Dispose of soiled gloves after use.

ACTIVITY: *Protecting Ready-to-Eat Foods*

Instructions: Write the food preparation scenario on the flip chart. Ask participants to walk you through the steps for how to prepare the food safely to prevent bare hand contact with the ready-to-eat food. Write steps down as they shout them out. This activity should take about 5 minutes.

Scenario: Slicing deli turkey and then making turkey sandwiches

SAY: We are going to talk through a food preparation scenario where we want to avoid bare hand contact with the food. We are going to slice turkey from a roll and then use that turkey to make turkey and cheese sandwiches. Please give me the first food prep step for slicing the turkey.

DO: Let participants talk through the steps of food preparation. Correct the participants if they skip a step or say an incorrect one. A possible solution to the scenario is provided.

FEEDBACK:

Possible solution:

1. Wash hands and put on gloves.
2. Use gloved hands to handle sliced turkey and place slice turkey in a container. Place in small batches, cover and label, and put into the fridge for use later.
3. When done slicing turkey, remove gloves, wash hands, and gather equipment and ingredients to make batches of sandwiches.
4. Wash hands and put on gloves.
5. Using gloved hands, assemble sandwiches in small batches. Place sandwiches in clamshell packaging for placement on the service line.

Conclusion

SAY: Great job everyone! As you have learned, good employee health and personal hygiene practices are effective against spreading foodborne illness. Imagine if an ill employee did not report their symptoms and improperly washed their hands after using the bathroom because they were in a hurry. Imagine then that this employee goes on to handle cheese for use on sandwiches with their bare hands. There is now a very high risk of a foodborne illness outbreak. Gloves and/or utensils, along with proper handwashing and not working when sick, can help protect food from contamination; therefore, protecting the children you serve.

That concludes Lesson 1. We will now move on to discuss important food safety temperatures.

ASK: Do you have any questions before we move on?

Instructor's Note: Remember that participants can also use the Bike Rack if there are time restraints.

Lesson 2: Temperatures for Food Safety

LESSON-AT-A-GLANCE

Time	Topic	Activity	Materials
Introduction			
<5 minutes	Lesson Objectives		
Objective: Explain the importance of the temperature danger zone in ensuring food safety.			
<5 minutes	Temperature danger zone	Temperature Danger Zone Thermometer	• Flip chart paper • Markers
Objective: Define time and temperature control for safety (TCS) foods and why temperatures must be controlled during food production.			
<5 minutes	Time and temperature control for safety (TCS) foods		
Objective: Describe the importance of using thermometers in a school nutrition program.			
<5 minutes	Thermometers in a school nutrition program		
Objective: Demonstrate how to calibrate a thermometer properly to ensure accurate temperatures are taken.			
10 minutes	Why, when, and how to calibrate a food thermometer	Calibrating Bi-Metallic and Digital Thermometers Demonstration	• Bi-metallic stemmed thermometer • Digital stemmed thermometer • Large container (2 quart) • Ice • Water
Objective: Explain how to take the temperature of different kinds of food to get an accurate reading.			
15 minutes	Taking temperatures of different kinds of food	*Using Thermometers* Video	• *Using Thermometers* video • Computer to present slides and/or DVD and external speakers • Projector and screen

Time	Topic	Activity	Materials
Objective: Discuss important food safety time and temperature points throughout the foodservice process.			
10 minutes	Important time and temperature points through the foodservice process	Food Safety Throughout the Food Process	
Conclusion			
<5 minutes			
Total Time: 45 minutes			

Lesson 2: Temperatures for Food Safety

Introduction

SHOW SLIDE: *Lesson 2: Temperatures for Food Safety*

SAY: Handling food safely includes keeping food at safe temperatures throughout all steps of the foodservice process. Controlling time and temperature is one of the most important ways we can control biological hazards such as bacteria in food.

DO: Refer participants to the lesson objectives in the Participant's Workbook.

SAY: After this lesson, you will be able to

- explain the importance of the temperature danger zone in ensuring food safety,
- define time and temperature control for safety (TCS) foods and why temperatures must be controlled during food production,
- describe the importance of using thermometers in a school nutrition program,
- demonstrate how to calibrate a thermometer properly to ensure accurate temperatures are taken,
- explain how to take the temperature of different kinds of food to get an accurate reading, and
- discuss important food safety time and temperature points throughout the foodservice process.

Objective: Explain the importance of the temperature danger zone in ensuring food safety.

SHOW SLIDE: *Temperature Danger Zone*

SAY: Keeping foods out of the temperature danger zone is a priority in school nutrition. The temperature danger zone, 41 °F – 135 °F, is the temperature range in which bacteria grow rapidly. Bacteria can double in number in as little as 20 minutes. At this rate, harmful bacteria can multiply in food to a level capable of causing foodborne illness. It is important to keep hot food above 135 °F and cold food below 41 °F, and all perishable food out of the danger zone.

DO: On a piece of flip chart paper, draw the outline of a thermometer. Ask a participant to come forward and mark the temperatures of the temperature danger zone on the poster with a red marker.

SAY: I need a volunteer to come up to the front and mark the temperatures of the temperature danger zone on the poster with the red marker.

ASK: What is the temperature danger zone in your state or local jurisdiction?

FEEDBACK: The *Food Code* uses the 41 °F – 135 °F guideline. Some states or jurisdictions may have different guidelines. Check the guidelines in your state.

Instructor's Note: If asked, the USDA's Food Safety Inspection Service states the temperature danger zone is 40 °F – 140 °F for consumer guidelines. This temperature range includes the Food Code temperature danger zone (41 °F – 135 °F), and therefore is safe to use.

SAY: Our goal in school nutrition is to keep food out of the temperature danger zone as much as possible to reduce the opportunity for bacteria to grow. Foods should be limited to no longer than a total of 4 hours in the temperature danger zone. Remember this includes receiving, storing, preparing, and serving.

Objective: Define time and temperature control for safety (TCS) foods and why temperatures must be controlled during food production.

SHOW SLIDE: *TCS Foods*

SAY: Foods that require control of time and temperature to limit pathogenic microorganism growth or toxin formation are known as time/temperature control for safety (TCS) foods. Please turn in your Participant's Workbook to the **Time and Temperature Control for Safety (TCS) Foods** handout to review the TCS foods with me. TCS foods include raw and cooked meat and poultry. They are also plant-based foods that have been heat treated such as cooked vegetables. Raw seed sprouts, cut melons, cut leafy greens, cut tomatoes, or mixtures of cut tomatoes are TCS foods. Finally, garlic-in-oil mixtures for which measures have not been taken to control bacteria growth need time and temperature control. These food items are low in acid, high in moisture, and high in nutrients, which encourage bacterial growth.

Time and Temperature Control for Safety (TCS) Foods

Foods that require control of time and temperature to limit pathogenic microorganism growth or toxin formation are known as time/temperature control for safety (TCS) foods. Here is a list of common TCS Foods.

Dairy products		Soy protein like tofu	
Meats and poultry		Sprouts and sprout seeds	
Fish and shellfish		Sliced melons	
Shell eggs (non-treated)		Cut tomatoes	
Baked potatoes		Cut leafy greens	

Heat treated plant based food like cooked vegetables, rice, and beans		Untreated garlic and oil mixtures	

Adapted from National Restaurant Association. (2012). *ServSafe manager (6th ed.)* Chicago: Author.

SAY: You may ask why time and temperature are so critical to keeping food safe. Nutrients, water, and the acidity of these foods support bacterial growth. By limiting the time bacteria have to use these resources, you prevent bacterial growth. Cooking foods to their appropriate internal temperatures reduce bacteria numbers. By holding hot food at or above 135 °F, it stays hot enough to prevent bacteria from growing. Likewise, by holding cold food at or below 41 °F, it stays out of the temperature range needed for bacteria growth.

Time and temperature control is important to limit the growth of microorganisms or toxin formation; therefore, it is important that school nutrition employees follow established guidelines to maintain safe food.

ASK: What are some TCS foods you serve in your school?

FEEDBACK:

- Brown rice
- Salads
- Baked chicken
- Watermelon slices

SAY: School menus have time/temperature control for safety foods daily on the menu. You are responsible for controlling time and temperatures of TCS foods to limit microorganism growth.

Objective: Describe the importance of using thermometers in a school nutrition program.

SHOW SLIDE: *Thermometers*

SAY: Thermometers are an important tool in our school nutrition programs. We should use them throughout all steps of the foodservice process. Thermometers assist you in keeping food safe by monitoring and assuring that critical temperatures related to food safety are met.

There are different types of thermometers used for different tasks. Appliance thermometers monitor ambient temperatures in coolers, freezers, and storerooms. Food thermometers monitor food temperatures during receiving, preparing, cooking, holding, serving, cooling, and transporting. There are different varieties of food thermometers. There are thermometers that are tip sensitive; some require being put into food up to a marked point, and some measure surface temperature. The type of food will often determine what type of thermometer you will use.

Using thermometers is important to ensure proper temperatures are being met. For example, an employee takes chicken tenders out of the oven when they "look done". The children complain that the tenders were cold and frozen on the inside. Because the employee did not use a thermometer to check the temperature of the chicken tenders, they were undercooked and a foodborne illness outbreak could possibly happen.

ASK: What types of thermometers do you use in your school nutrition program?

FEEDBACK:

Responses may include:

- Bi-metallic stemmed
- Bi-metallic stemmed, oven-safe meat
- Digital stemmed
- Thermocouple
- Infrared
- Temperature sensitive strips/single use temperature indicator
- Appliance thermometers – refrigerator/freezer thermometers and oven thermometers

Objective: Demonstrate how to calibrate a thermometer properly to ensure accurate temperature are taken.

SHOW SLIDE: *How to Calibrate a Thermometer*

SAY: Thermometers are an important food safety tool in the kitchen, but they are only effective if calibrated correctly. Calibration is the process of testing the readout for accuracy and adjusting it, if needed. If a thermometer is out of calibration, you may over cook or under cook food. Under cooking may lead to a foodborne illness since you are not reaching the temperature needed to kill the bacteria in the food. Over cooking reduces the quality of the product.

Ideally, you should calibrate thermometers daily but at least once a week. If dropped, recalibrate the thermometer prior to using. The easiest method for calibrating a thermometer is the ice water method. For this, you will need your thermometer, a large container large enough to submerge the dimple on the thermometer, enough ice to fill the container, water, and a calibration tool if you are calibrating a bi-metallic stemmed thermometer.

ACTIVITY: *Calibrating Bi-Metallic and Digital Thermometers Demonstration*

Instructions: You will demonstrate how to calibrate bi-metallic stemmed and digital thermometers using the ice water method. From the toolbox, you will need the large container, dial thermometer, digital thermometer, and calibration tool. You will also need water and ice. Follow the steps to calibrate the thermometer using the ice water method. Explain the steps to participants as you do them and why each step is important. Calibrate the bi-metallic thermometer first, then the digital thermometer. This demonstration should take 5 minutes. An alternative to this demonstration is to have the participants practice calibrating the thermometers.

1. Fill a large container with ice.
2. Add water to within 1 inch of rim of container.
3. Stir mixture well.
4. Let sit for 1 minute.
5. Place thermometer in container so that the sensing area of stem or probe (the dimple) is completely submerged in ice water.
6. Prevent thermometer from touching sides or bottom of container.
7. Let thermometer stay in ice water for 30 seconds or until the dial stops moving on a bi-metallic thermometer.
    a. For a bi-metallic thermometer, place the calibration tool on the hex adjusting nut and rotate until the dial reads 32 °F, while in ice water.
    b. For digital stemmed thermometers, follow the manufacturer's directions and press the reset button to calibrate.

SAY: I am going to demonstrate how to calibrate both a bi-metallic stemmed thermometer and a digital thermometer. Please feel free to get up and come gather around so you can see how to do this.

DO: Demonstrate how to calibrate both thermometers. Make sure to point out the dimple on the thermometers so participants know how deep to put the thermometer in the water. Say the steps aloud as you walk through them. You do not need to repeat steps 1 – 4 for the digital thermometer. Answer any questions. Have the class return to their seats.

SAY: Locate the **Calibrating Thermometers** handout in your workbook. This handout provides the steps for accurately calibrating a thermometer and is a valuable resource for future reference and training purposes. As you can see, there is another method for calibrating thermometers called the boiling water method. The instructions for the boiling water method are listed here if you decide to use this calibration method.

Calibrating Thermometers

Introduction

Food temperatures must be checked throughout the food preparation process, and the thermometers used must be accurate. School nutrition employees are responsible for checking the accuracy of thermometers and calibrating them if they are not accurate.

Here Are the Facts

Inaccurate thermometers will give misleading information. For example, if you use a thermometer that registers 10 °F higher than the actual temperature, you would cook ground beef to 145 °F rather than 155 °F. Conversely, if the thermometer registers too low, you could easily overcook food.

Application

It is important for school nutrition employees to know when and how to calibrate bi-metallic stemmed and digital (that can be calibrated) thermometers.

When?

Thermometers are sensitive and can lose calibration. It is important to calibrate them

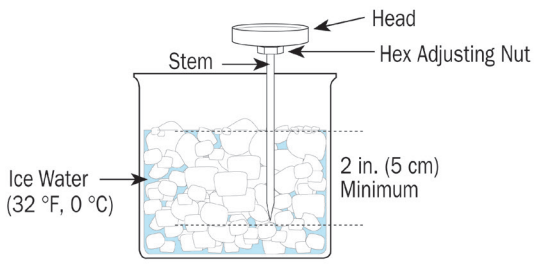
- ideally daily (but at least weekly),
- when they are dropped, or
- more often if specified by local policy.

How?

There are two methods to calibrate thermometers: the ice water method and the boiling water method.

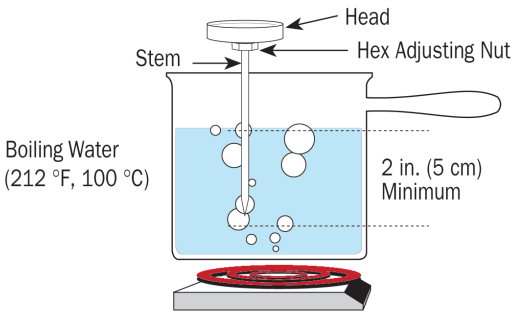
Ice Water Method

1. Fill a large container with ice.
2. Add water to within 1 inch of rim of container.
3. Stir mixture well.
4. Let sit for 1 minute.
5. Place thermometer in container so that the sensing area (dimple) of stem or probe is completely submerged.



6. Prevent thermometer from touching sides or bottom of container.
7. Let thermometer stay in ice water for 30 seconds or until the dial stops moving on a bi-metallic thermometer.
8. For a bi-metallic thermometer, place the calibration tool on the hex adjusting nut and rotate until the dial reads 32 °F, while in ice water.
9. For digital stemmed thermometers, follow the directions on the packing and press the reset button to calibrate.
10. Repeat process with each thermometer.

Boiling Water Method



1. Fill a saucepan or stockpot with water.
2. Bring water to a rolling boil.
3. Place thermometer in the container so that the sensing area of the stem or probe (dimple) is completely submerged.
4. Do NOT let the thermometer stem/probe touch sides or bottom of container.
5. Let thermometer stay in the boiling water for 30 seconds or until the dial stops moving.
6. Place the calibration tool on the hex-adjusting nut and rotate until the thermometer dial reads 212 °F, while in boiling water.
7. Some digital thermometers (thermistors) and thermocouples have a reset button that should be pushed.
8. Repeat process with each thermometer.

Note: The boiling point of water is about 1 °F lower for every 550 feet above sea level. If you are in a high altitude area, the temperature for calibration should be adjusted. For example, if you were at 1,100 feet above sea level, the boiling point of water would be 210 °F.

Documenting Calibration

Each time thermometers are calibrated, the process should be documented. The food safety program should include a form for documenting the calibration process of each thermometer.

Remember, follow state or local health department requirements.

SAY: Maintaining documentation of when calibrations are performed helps monitor the accuracy of thermometers in your school nutrition program. This documentation provides evidence that your program is actively carrying out best practices to ensure thermometers are providing accurate readings for foods prepared and served. Please turn to the **Thermometer Calibration Log** in your Participant's Workbook. You can use logs like this one to record the date, thermometer calibrated, corrective action taken, employee and manager initials, and the date reviewed. Record this information each time you calibrate a thermometer. ICN provides a variety of logs that you can use. We will discuss them later in the course.

Thermometer Calibration Log

Instructions: School nutrition employees will record the calibration temperature and corrective action taken, if applicable, on the Thermometer Calibration Log each a time thermometer is calibrated. The school nutrition manager will verify that school nutrition employees 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

Objective: Explain how to take the temperature of different kinds of food to get an accurate reading.

SHOW SLIDE: *Food Temperatures*

SAY: As we have discussed, thermometers are vital to establishing accurate temperatures throughout the foodservice process. Take and record temperatures from the time food is delivered until it is served or, when necessary, cooled and stored as leftovers.

There are different kinds of food produced in a school nutrition program. Different kinds of foods may require the use of different kinds of thermometers. For example, when receiving frozen food items, you could use an infrared thermometer, which takes the surface temperature of an item, to confirm that the food is at 32 °F or below. You could also place a bi-metallic or digital stemmed thermometer between two packages of frozen food to check the temperature.

We are going to watch a video that introduces you to how to use thermometers. I want you to pay attention to what is in the video. Key points from the video are in your Participant's Workbook so there is no need to take notes.

ACTIVITY: *Using Thermometers Video*

Instructions: The trainer will show the *Using Thermometers* video. After watching the video, ask the participants the discussion questions. The questions and their possible answers are listed here. The questions and answers reflect the key points from the video, and are in the **Using Thermometers Video Key Points** handout in the Participant's Workbook. Participants do not need to write anything down and should be encouraged to focus on the videos. This activity will take about 10 minutes.

SHOW SLIDE: *Using Thermometers*

DO: Show the video. After showing the video, ask participants the following discussion questions.

ASK: What kinds of thermometers did you see in this video?

FEEDBACK:

- Bi-Metallic Stemmed
- Digital Stemmed (Thermistor)

- Thermocouple
- Infrared
- Single use temperature indicator

ASK: What temperatures should you record?

FEEDBACK:

- Food
- Storage areas
- Equipment

ASK: Name some activities for which you should take temperatures of foods.

FEEDBACK:

- Upon delivery of food items
- When cooking food
- When hot/cold holding food
- When re-heating food
- When cooling food

ASK: When recording temperatures, what is important to include?

FEEDBACK:

- Date
- Time
- Food item
- Temperature of food (cooking temperature, serving temperature, etc.)
- Initials

ASK: Why is it important to take corrective actions when food does not meet safe temperatures?

FEEDBACK: If food does not meet correct internal temperatures, harmful bacteria in that food product may not have been eliminated.

ASK: How do you clean and sanitize a thermometer?

FEEDBACK:

- Wash thermometers by hand with soapy water and rinse.
- Sanitize thermometers by wiping them with alcohol wipes or dipping them in a sanitizing solution that is approved for use on food contact surfaces.

ASK: Why is it important to clean and sanitize a thermometer?

FEEDBACK: Prevents cross contamination and cross contact between different foods.

ASK: Different food items require different methods of taking temperatures. Explain how you would take the temperature of the following foods.

FEEDBACK:

- Boneless roast – insert thermometer in the middle of the roast
- Whole turkey – insert thermometer at the thickest part avoiding any bones
- Casseroles – check temperature in the center and at several other points
- Hamburger patties (thin patties) – use a thermistor or probe that is tip sensitive to check temperatures
- Milk – open a carton and insert thermometer at least 2 inches into the milk
- Packaged foods – place the thermometer between two packages without puncturing the packages
- Frozen food – Use an infrared thermometer to take a surface temperature reading, or a bi-metallic stemmed thermometer and place it in between 2 packages.

SAY: Great! The key points from this video are on the ***Using Thermometers*** **Video Key Points** handout in the Participant's Workbook. For more information on how to use thermometers, you can refer to the **Using Food Thermometers** handout as well.

Now that we have learned about how to properly calibrate and use food thermometers, we will learn about the important times and temperatures that must be monitored during the foodservice process.

Using Food Thermometers

Introduction

Thermometers are essential tools in any school nutrition program and are necessary to implement a food safety program. School nutrition employees need to know how to use thermometers to check food temperatures.

Here Are the Facts

Thermometers are designed for different uses and different temperature ranges. Food thermometers need to measure temperatures between 0 °F and 220 °F. Thermometers needed to check food temperatures include the following:

- Thermistor or thermocouple with a thin probe 
- Bi-metallic stemmed thermometer 
- Oven-safe bi-metallic thermometers 
- Equipment thermometers 

Application

How to Care for Thermometers

- Clean and sanitize thermometers before each use. Washing thermometers by hand unless specified by the manufacturer that the thermometer can go through the dishwasher. Sending thermometers through the dishwasher (unless they are specially designed for use in dishwashers) can ruin the thermometer.
- Wash the stem of the thermometer and sanitize by dipping stem into sanitizing solution or wiping with a sanitizing wipe. Allow to air-dry.
- Store food thermometers in a clean area where they are not subject to contamination.
- Check and change batteries in digital thermometers on a routine basis.

How to Take Temperatures

Measure the internal temperature of food by inserting the stem of the thermometer into the thickest part of the food, being sure to cover the sensor (dimple). Wait for the dial or digital indicator to stabilize for about 15 seconds. Take temperatures based on the type of food.

- Meats
  - Roasts—insert thermometer in the middle of the roast avoiding any bones.
  - Poultry—insert thermometer at the thickest part avoiding any bones.
  - Casseroles—check temperature in the center and at several other points.
  - Thin meats, such as hamburger patties—use a thermistor or probe that is tip sensitive to check temperatures.
- Milk—open a carton and insert thermometer at least 2 inches into the milk.
- Packaged foods—insert the thermometer between two packages without puncturing the packages.

Recording Temperatures

When food temperatures are taken, they should be recorded on the production record or on a separate cooking and reheating log.

Remember, follow state or local health department requirements.

Objective: Discuss important food safety time and temperature points throughout the foodservice process.

SHOW SLIDE: *Safe Food Throughout All Steps of the Food Process*

SAY: In school nutrition programs, maintaining safe food throughout all steps of the foodservice process is your responsibility. The foodservice process steps include purchasing, receiving, storing, preparing, cooking, holding, serving, cooling, reheating, and transporting. At all times you must work to control the time and temperature of food, practice good personal hygiene, and prevent food contamination.

Please turn to the **Temperatures Through Food Production** handout in your Participant's Workbook. You can use this as a resource for important temperatures and best practices for time and temperature control throughout the foodservice process. If you would like, you can follow along and take notes on this chart as we discuss food safety throughout the foodservice process.

Temperatures Through Food Production

Important Temperatures	Why It Is Important	Best Practices
Purchasing		
• Cold food: 41 °F and below • Hot food: 135 °F and above	Buy from vendors that have good food safety practices in place to ensure the food you purchase has not been temperature abused.	• Buy from reputable vendors. • Include food safety standards in purchasing agreements.
Receiving		
• Refrigerated food: 41 °F and below • Frozen food: at or below 32 °F • Hot food: held at or above 135 °F	Cold foods must be received at 41 °F or below so that it is not in the temperature danger zone. Frozen food must be frozen and contain no ice crystals. Ice crystals are a sign that the food has been thawed and refrozen.	• Keep receiving area clean. • Inspect the delivery truck. Make sure it is clean and free of odors. Check food temperatures, paying particular attention to frozen and refrigerated products. • Look for signs of contamination and container damage. Reject damaged packages; their contents may also be contaminated or damaged. • Check for separation of raw and ready-to-eat or prepared foods during transport. • Store foods immediately.
Storing		
• Dry storage areas: between 50 °F and 70 °F • Refrigerated storage areas: at or below 41 °F • Deep chilling storage areas: between 26 °F and 32 °F • Freezer storage areas: between -10 °F and 0 °F	Storing food out of the temperature danger zone assists in preserving food quality and decreases the likelihood of bacterial growth. However, dry storage items are shelf stable in the temperature danger zone because bacteria present in the sealed container is eliminated during processing.	• Use the First In First Out (FIFO) principle. Older products should be used first. • Store products in original packaging. Label foods with delivery date. • Keep raw foods separate from cooked or ready-to-eat products. • Store foods at least 6 inches off the floor and 6 inches away from the wall. • Keep storage areas clean, dry, and pest-free. • Store chemicals away from foods and food-related supplies. • Maintain, monitor, and record refrigerator, freezer, and dry storage room temperatures.

Important Temperatures	Why It Is Important	Best Practices
Preparing		
• Pre-chill ingredients for cold foods to 41 °F or below before combining with other ingredients. • Limit the preparation time of any ingredients to no more than 30 minutes at room temperature before cooking, serving, or returning to the refrigerator.	These methods prevent food from being in the temperature danger zone too long.	• Wash hands frequently, properly, and at appropriate times. • Avoid cross contamination. • Keep foods out of the temperature danger zone. • Use batch cooking to limit the time between preparation and service. • Thaw foods properly. • Chill all cold foods as quickly as possible. • Prepare foods as close to serving time as the menu will allow.
Cooking		
• 165 °F – poultry, stuffing, stuffed meats, stuffed pasta, casseroles, leftovers • 155 °F – ground meats, such as hamburger, ground pork, sausage, eggs for hot holding • 145 °F – beef roasts, pork roasts, beef steaks, ham, fish • 135 °F – ready-to-eat foods taken from a commercially processed, hermetically sealed package; vegetables (frozen or canned)	Cooking foods to the correct internal temperature will destroy existing bacteria, even though it may not kill toxins or bacterial spores.	• Avoid cross contamination. • Cook foods to the proper internal temperature for appropriate time. • Use a clean and calibrated food thermometer. • Record internal food temperature.
Holding and Serving		
• Cold food: held at or below 41 °F • Hot food: held at or above 135 °F	These temperatures keep food out of the temperature danger zone and prevent pathogen growth.	• Avoid cross contamination. • Keep foods out of the temperature danger zone. • Monitor and record food temperatures. • Monitor the temperature of hot holding and cold holding equipment.

Important Temperatures	Why It Is Important	Best Practices
Cooling		
• Hot food must be cooled from 135 °F to 70 °F within 2 hours. If not, the food must be reheated to 165 °F for 15 seconds or discarded. • Food must be cooled within a total of 6 hours from 135 °F to 41 °F (if step one is achieved). • Foods that start at room temperature (70 °F) must be cooled to 41 °F within 4 hours.	This is the time and temperature regulations specified by the *Food Code* to safely cool foods in order to prevent bacterial growth.	• Speed up cooling by using techniques such as: ▪ Stirring frequently ▪ Dividing food into small quantities ▪ Using shallow pans ▪ Using ice water baths or ice paddles whenever possible • Use a clean and calibrated food thermometer to check temperatures. • Monitor and record food temperatures during the cooling process. • Store foods appropriately – covered, labeled with product name and date prepared.
Reheating		
165 °F for 15 seconds within 2 hours	This is the temperature and time required to kill any bacteria that may be present in the food.	• Reheat to internal temperature of 165 °F for 15 seconds within 2 hours of less. • Monitor and record internal temperatures of foods. • Never reheat food in hot holding equipment. • Recommended to reheat food one time; quality diminishes each time.
Transporting		
Refer to temperatures for holding		

SAY: Maintaining food at safe temperatures in a clean environment prior to cooking is an important step in the foodservice process for purchasing, receiving, and storage. For purchasing, receiving, and storing food, follow safe food temperature guidelines for each respective food. This starts at the vendors warehouse, continues through transportation to the school, and finally storage at your school nutrition program. To document your school nutrition operation's best efforts to keep food safe, use appliance thermometers to monitor the ambient temperature of freezers, refrigerators, and dry storage areas. Once again, record these temperatures on a log to provide documentation that food is being held at correct temperatures.

SHOW SLIDE: *Purchasing*

SAY: Purchasing is a multistep process for obtaining food that meets the guidelines of the school nutrition program at the lowest possible price from vendors who maintain high food safety standards. Food must be stored and handled by the vendor in a clean environment, and safe food temperatures must be maintained to ensure food safety and quality. For food safety, vendors must maintain frozen foods between -10 °F – 0 °F, cold foods at 41 °F or below, and dry goods or shelf stable items between 50 °F – 70 °F. Consider including food safety requirements in bids to guarantee the food is delivered safely i.e. company has a HACCP and food recall plans.

SHOW SLIDE: *Receiving*

SAY: When you receive food from a vendor, you are responsible for checking the cleanliness and temperatures of the frozen and refrigerated areas of the delivery truck. You are also responsible for taking temperatures of frozen and cold foods. Frozen foods should arrive at 32 °F or below and not show signs of thawing such as wet boxes and ice crystals in the food. Refrigerated food should arrive at 41 °F or below; store food immediately. Food packaging should not be damaged. The truck should also be clean, and there should be no sign of pests.

If a truck does not meet the specifications needed for good food safety (incorrect temperature, food not properly stored, pests present), reject the shipment. This may mean getting your manager or director to come help you and contacting the distributor. It is important to have a back-up meal available for situations like this.

For those who transport food to a satellite location or are a satellite location, hot food should be received at 135 °F.

SHOW SLIDE: *Storing*

SAY: Storage areas in your school nutrition program must be clean and temperature controlled environments. Storing food out of the temperature danger zone assists in preserving food quality and decreases the likelihood of bacterial growth. However, dry storage items are shelf stable in the temperature danger zone because bacteria present in the sealed container is eliminated during processing. Freezers should be

between -10 °F – 0 °F, refrigerators should be at 41 °F or below, and dry storage areas between 50 °F – 70 °F. Maintain, monitor, and record refrigerator, freezer, and dry storage room temperatures.

Keep storage areas clean, dry, and pest-free. Store food in a way that prevents contamination such as keeping raw foods separate from cooked or ready-to-eat products, and storing food items at least 6 inches off the floor. Keep food in its original packaging for easy identification, and label them with their delivery date. Use the First In First Out (FIFO) method for inventory to use older items first. Store chemicals away from foods and food-related supplies.

When you move from storing food to preparing, it is even more important to monitor time and temperature to ensure food is not spending too much time in the temperature danger zone before serving.

SHOW SLIDE: *Preparing*

SAY: When preparing, cooking, holding, and serving foods, hold them at the correct temperatures for the correct times to help maintain food quality and safety. Cold food should be held at or below 41 °F. When preparing cold foods, try to prevent food from sitting out for long periods. Best practices recommend pre-chilling shelf stable foods to 41 °F or below prior to preparation, following standardized recipes, and preparing in small batches to maintain quality and keep foods outside the temperature danger zone (41 °F – 135 °F). By preparing cold food in small batches, such as only pulling out enough ingredients to make the first pan of sandwiches, you reduce the amount of time cold items sit at room temperature. Prepare foods as close to serving time as the menu will allow. Monitor the amount of time cold foods are at room temperature; it cannot exceed a total of 4 hours. If cold food rises into the temperature danger zone, bacteria will begin to grow and food safety will be compromised. Discard cold foods if they remain in the temperature danger zone more than 4 hours.

To prepare food, you may have to thaw it first. Thawing frozen foods is a step in preparation where foods may easily go into the temperature danger zone. Avoid this by using one of these thawing methods:

- Thaw food as a part of the cooking process.
- Thaw food in the refrigerator over a 2–3 day period.
- Thaw food under drinkable, running water at a temperature of 70 °F or less.

Make sure to use thawed food in adequate time to prevent spoiling. Only thaw the amount needed for a meal to avoid having to re-freeze food items, as this can reduce the quality of the food.

Avoid cross contamination while preparing food, and remember to wash your hands frequently, properly, and at appropriate times.

SHOW SLIDE: *Cooking*

SAY: Cooking food to the correct internal temperature limits the growth of bacteria even though it may not kill bacterial spores. Cooking is a kill step for pathogens. It is key to cook to the recommended internal temperature within an appropriate timeframe to kill bacteria in food. Different foods have different internal temperature requirements based on the bacteria commonly associated with the food and what temperature will kill that bacteria. For example, *E. coli* is often associated with ground beef; therefore, it is recommended to cook ground beef to 155 °F to kill any possible *E. coli* bacteria.

Examples of the final cooking temperature include

- 135 °F – pre-cooked pizza, frozen vegetables;
- 145 °F – roast beef, pork roast;
- 155 °F – raw hamburger patty, scrambled eggs (for holding), taco meat; or
- 165 °F – roast turkey, stuffed pasta shells, leftover chili.

Notice that all cooking temperatures are above the temperature danger zone of 41 °F – 135 °F. Cook all foods to their required internal temperature for a minimum of 15 seconds before serving with the exception for roasts, which need to be at 145 °F for at least 4 minutes. Use a clean, calibrated food thermometer to check the internal temperature of foods and record internal food temperature.

SHOW SLIDE: *Holding and Serving*

SAY: It is important to hold foods at proper temperatures before serving. After cooking hot food to the correct internal temperature, hold it at 135 °F or above. This prevents any bacteria from growing. You can hold hot food using equipment like hot holders, warming ovens, and steam tables. This equipment is designed for holding foods and should not be used to cook or reheat foods. Monitor and record temperatures of foods and equipment on logs.

Hold cold foods at 41 °F or below to limit bacterial growth. Methods like ice baths, cold wells, and refrigerators can hold cold foods at the proper temperature before service.

If your school uses time instead of temperature as a control method, discard food after 4 hours in the temperature danger zone. You still need to monitor food temperature to know when the food enters the temperature danger zone and when to throw it out. An example of this method would be a field trip, where sandwiches are prepared and stored cold until packed into coolers. The temperature of the food and time of packing is recorded when the food is packed onto the buses. The school nutrition professional communicates to the person taking charge of the food to discard the food 4 hours from the recorded packing time if it reaches above 41 °F.

Instructor's Note: When using time as a control at 4 hours, cold food must start at 41 °F or below, and hot foods must be at 135 °F or above. The food must be marked for when it was removed from temperature control and must be discarded after 4 hours. If using time as a control for 6 hours, food must start at 41 °F, cannot exceed 70 °F, and must be discarded after 6 hours.

Holding foods at the correct temperatures helps reduce the risk of bacteria growing in food. If you transport foods from one site to another, it is important to monitor and record temperatures of foods on a log before it leaves your school nutrition program and when it is delivered to a site. School nutrition programs that transport foods must maintain cold foods at 41 °F or below and hot foods at 135 °F or above.

SHOW SLIDE: *Cooling*

SAY: Cooling food is a very important step as you move hot foods quickly through the temperature danger zone. Cooling occurs when food ingredients are prepared a day ahead or when there are leftovers. In many cases, school nutrition employees are off duty within an hour or less after the completion of lunch service. Time, temperature, and employee schedules are important issues to consider in cooling practices. Cooling hot foods is a two-step process:

1. Cool hot food from 135 °F to 70 °F within 2 hours. If not achieved, reheat the food to 165 °F for 15 seconds and restart the cooling process, or discard.
2. Cool hot food from 135 °F to 41 °F within a total of 6 hours (if step one is achieved).

For foods that start at room temperature (70 °F), cool them to 41 °F within 4 hours.

Different active cooling methods include

- Placing food loosely covered in shallow containers no more than 2 inches deep on the top shelf in the back of a walk-in or reach-in cooler and stirring frequently;
- Using a quick-chill unit such as a blast cooler;
- Placing the container of food in an ice water bath and stirring;
- Separating food into smaller or thinner portions; and
- Using an ice paddle or chill stick to stir cooling foods.

Record cooling temperatures and times on a cooling log to provide evidence of proper cooling procedures. Once food is cooled, store foods appropriately — covered and labeled with product name and date prepared.

SHOW SLIDE: *Reheating*

SAY: Depending on your state and local regulations, you may or may not be allowed to keep leftovers. If your regulations allow using leftovers, properly reheating food is very important.

When you reheat food, you bring it through the temperature danger zone. It is important to do this as quickly as possible. Reheat foods to 165 °F within 2 hours to reduce the opportunity for microorganisms to grow. Discarding leftover, reheated foods after service is encouraged since it reduces the quality of foods

to repeatedly reheat it. Never reheat food in hot holding equipment, only in equipment that is appropriate to cooking food. Monitor and record internal temperatures of foods.

SHOW SLIDE: *Food Safety Throughout the Foodservice Process*

ACTIVITY: *Food Safety Throughout the Foodservice Process*

Instructions: Participants will use the **Temperatures Through Food Production** and **Food Safety Throughout the Foodservice Process** handouts, located in their Participant's Workbook. Provided on the **Food Safety Throughout the Foodservice Process** handout are the steps of the foodservice process. Participants will reflect on their own school nutrition program practices, and write either one area of improvement they could make for that step or one area where they are excelling. The participants may use the **Temperatures Through Food Production** handout for ideas of best practices. Ask different participants to report out on each step. This activity will take 10 minutes.

Food Safety Throughout the Foodservice Process

Instructions: For the provided food process step, write either one thing your school nutrition program needs to improve in this area, or one thing it is already doing well.

Purchasing

Receiving

Storing

Preparing

Cooking

Holding

Cooling

Reheating

SAY: We talked about a lot of information regarding critical time and temperature steps for the foodservice process. Please turn in your Participant's Workbook to the **Food Safety Throughout the Foodservice Process** handout. I want you to reflect on your school nutrition program practices, and write either one area of improvement you could make for each step or one area where you are excelling. You will have 5 minutes.

DO: Give participants 5 minutes, walking around to see if anyone needs help.

SAY: I would like to hear from you. Who would like to say what they wrote down for "Purchasing?"

DO: Walk through the remaining steps:

- Receiving
- Storing
- Preparing
- Cooking
- Holding
- Cooling
- Reheating

Do not make anyone answer who does not want to provide a response.

Conclusion

SAY: Very good answers! Time and temperature control throughout the foodservice process is very important for preventing bacterial growth and potential foodborne illness in a school nutrition program. We covered a lot of information in Lesson 2. We have learned about the temperature danger zone and TCS foods, and why they are important to food safety. We have also discussed why school nutrition programs should use thermometers and how, when, and why to calibrate a thermometer. Finally, we have learned about important food temperatures to monitor throughout the foodservice process that help ensure food safety.

In Lesson 3, we will learn more about avoiding contamination of food.

ASK: Do you have any questions before we move on?

Lesson 3: Avoiding Contamination of Food

LESSON-AT-A-GLANCE

Time	Topic	Activity	Materials
Introduction			
<5 minutes	Lesson Objectives		
Objective: Discuss the three different types of food contamination and methods for preventing them to ensure food safety.			
20 minutes	Different types of food contamination • Cross contamination • Chemical contamination • Cross contact	Preventing Food Contamination	• Flip Chart • Marker
Objective: Explain how properly cleaning, rinsing, and sanitizing can prevent food contamination.			
5 minutes	Using proper cleaning, rinsing, and sanitizing to prevent contamination of food		• Flip Chart • Marker
Conclusion			
<5 minutes			
Total Time: 30 minutes			

Lesson 3: Avoiding Contamination of Food

Introduction

SHOW SLIDE: *Lesson 3: Avoiding Contamination of Food*

SAY: It is the responsibility of school nutrition staff to protect food from contamination. Contamination of food can occur in many ways. Food can be contaminated by cross contamination, chemical contamination, and cross contact. Throughout the workday, school nutrition employees should diligently avoid contaminating food through their actions. We will review all three types of contamination and discuss preventative steps to keep food safe.

DO: Refer participants to the lesson objectives in the Participant's Workbook.

SAY: After this lesson, you will be able to

- discuss the three different types of food contamination and methods for preventing them to ensure food safety and
- explain how properly cleaning, rinsing, and sanitizing can prevent food contamination.

Objective: Discuss the three different types of food contamination and methods for preventing them to ensure food safety.

SHOW SLIDE: *Three Types of Food Contamination*

DO: Refer participants to **Common Causes of Food Contamination** handout.

SAY: The three methods by which food can become contaminated are cross contamination, chemical contamination, and cross contact. We will define the difference between these three types of food contamination. You can follow along with the **Common Causes of Food Contamination** handout.

Instructor's Note: Copy of the **Common Causes of Food Contamination** handout is located in the Instructor's Manual with the **Preventing Food Contamination** activity.

SHOW SLIDE: *Hand-to-Food Cross Contamination*

SAY: Cross contamination is the transfer of pathogens such as bacteria, viruses, and parasites from hand-to-food, food-to-food, or equipment and contact surfaces-to-food. You are probably most familiar with this type of contamination. Cross contamination is one of the most common causes of foodborne illness. There are many opportunities for cross contamination by hand, food, and equipment and contact surface-to-food to occur in school nutrition programs. To prevent cross contamination, we must follow good food safety practices.

Hand-to-food cross contamination involves pathogens being transmitted from an employee to the food. An example of this would be if an employee did not properly wash their hands after using the restroom and then touched cheese used to prepare sandwiches.

ASK: What examples of hand-to-food cross contamination can you think of?

FEEDBACK: Putting on gloves with unwashed hands before serving whole apples.

SAY: Good! Properly washing hands and wearing clean gloves would reduce the possibility of microorganisms or debris transferring from the hand to the food.

ASK: What are some other methods we can use to prevent hand-to-food cross contamination?

DO: Write "Hand-to-Food Cross Contamination" at the top a single piece of flip chart paper. As participants give responses, write down their examples under the heading.

FEEDBACK:

- Wash hands properly, frequently, and at appropriate times.
- Wash hands before putting on single-use gloves and change gloves frequently.
- Wear gloves or use utensils when handling ready-to-eat foods.
- Cover cuts, sores, and wounds with a clean bandage and a single-use glove.
- Keep fingernails short, unpolished, and clean.
- Do not wear jewelry, except for a plain band such as a wedding ring.
- Do not allow sick employees to work.

Instructor's Note: Be sure to mention any examples from above that are not mentioned by participants.

SHOW SLIDE: *Food-to-Food Cross Contamination*

SAY: Good responses! Now let's look at food-to-food cross contamination that involves one food transferring pathogens to another food. This can occur throughout the foodservice process. For example, raw chicken is stored in a bag on the top shelf of the refrigerator. The bag leaks, dripping raw chicken juice containing *Salmonella* onto food stored on lower shelves.

To prevent this, you should thaw the raw chicken in a container like a steam table pan, and place the container on the bottom shelf to keep chicken from dripping onto other foods causing cross contamination. Store food on shelves according to their internal cooking temperature; foods with the highest internal temperatures are stored on the lowest shelf. Ready-to-eat foods should be stored near the top shelf.

ASK: What examples of food-to-food cross contamination can you think of?

FEEDBACK: Placing raw, unwashed produce in contact with ready-to-serve produce.

ASK: What are some other methods we could use to prevent food-to-food cross contamination?

DO: Flip to a new page of flip chart paper. Write "Food-to-Food Cross Contamination" at the top and record participant responses.

FEEDBACK:

- Separate meats and other raw products from ready-to-eat foods during receiving, storage, and preparation.
- Separate different types of raw animal foods, such as eggs, fish, meat, and poultry, from each other except when combined in recipes. Store foods according to final cook temperature.
- Separate unwashed fruits and vegetables from washed fruits and vegetables and other ready-to-eat foods.
- Place food in covered containers or packages, except during cooling. Store in the refrigerator or cooler.
- Thaw food properly.
- Properly clean, rinse, and sanitize all food contact surfaces between contact with raw products and fresh or ready-to-eat products.

Instructor's Note: Be sure to mention any examples from above that are not mentioned by participants.

SHOW SLIDE: *Equipment or Contact Surfaces-to-Food Cross Contamination*

SAY: Good responses! We will now discuss the last type of cross contamination — equipment and food contact surface-to-food. Equipment and contact surface-to-food cross contamination may occur when a piece of equipment or food contact surface has not been cleaned properly, allowing pathogens to remain on that surface. Any other food that touches this equipment or food contact surface will be exposed to the remaining bacteria or viruses. An example of this would be not cleaning the blade of a can opener. Since this blade touches the food in the can, it will get dirty. Without proper cleaning, this blade may have bacteria on it that can then be transferred into every can it opens. To prevent this, we should properly clean, rinse, and sanitize the can opener blade before and after each use.

ASK: What examples of equipment and contact surface-to-food cross contamination can you think of?

FEEDBACK: Cutting board not washed after slicing ham, before wedging watermelon

ASK: What are some other methods that we could use to prevent equipment and contact surface-to-food cross contamination?

DO: Flip to a new page of flip chart paper. Write "Equipment and Contact Surface-to-Food Cross Contamination" at the top and record participant responses.

FEEDBACK:

- Use dry, cleaned, and sanitized equipment and utensils for food preparation.
- Clean and sanitize worktables, equipment, and cutting boards after each use and before beginning a new task.
- Use separate cutting boards for different foods (e.g. raw meats and fresh produce). This practice also applies to different types of meat (e.g. using separate cutting boards to cut chicken and then to prepare beef). If separate cutting boards are not available, wash, rinse, sanitize, and air-dry the cutting board between tasks.
- Clean and sanitize surfaces that are handled often, such as refrigerator and freezer handles.
- Use only dry, cleaned, and sanitized containers for food storage. Cover all foods well and label and date them.
- Maintain a fresh bucket of cleaning solution and a fresh bucket of sanitizing solution in the work area so that cleaning and sanitizing can be done easily.

Instructor's Note: Be sure to mention any examples that are not mentioned by participants.

SHOW SLIDE: *Chemical Contamination*

SAY: Chemical contamination happens when food is unintentionally exposed to chemicals. Improperly storing and using chemicals can result in chemicals getting into food. An example would be a school nutrition employee who does not read the directions for a chemical sanitizer and makes the concentration too strong. This stronger sanitizer is used on a food contact surface and leaves a residue. Now, this residue has the potential to get into any food that comes in contact with that surface.

ASK: What examples of chemical contamination can you think of?

FEEDBACK:

Chemical contamination

- Sanitizer is sprayed onto a food contact surface when food is present.
- Chemical bottle stored above food bursts and leaks onto food.

SAY: We can prevent this by following the manufacturer's instructions on the provided Safety Data Sheet for the sanitizer concentration level. We can also test the concentration level with test strips to confirm that it is at the correct concentration. It is beneficial to record these sanitation concentrations on a log to provide proof that best practices are being followed.

ASK: What are some other methods we can use to prevent chemical contamination?

DO: Flip to a new page of flip chart paper. Write "Chemical Contamination" at the top and record participant responses.

FEEDBACK:

- Store chemicals away from food products.
- Do not use chemicals in an area where food is being prepared.
- Store chemicals in original containers with labeling information.
- Never use food containers for chemicals or chemical containers for food.

- Use chemicals only for recommended purposes.
- Use Safety Data Sheets (SDS) provided by the manufacturer to ensure chemicals are stored and used properly.
- Check the concentration of the sanitizing solution with a sanitizing test kit to make sure it is at appropriate levels to sanitize.
- Teach employees how to use chemicals.

Instructor's Note: Be sure to mention any examples from above that are not mentioned by participants.

SHOW SLIDE: *Cross Contact*

SAY: Cross contact may not be a familiar term. Cross contact occurs when an allergen accidentally transfers from one food to another food or from a food contact surface to a food that does not contain the allergen. For example, if breaded chicken patties containing wheat and soy were baked on a sheet pan, and then that same pan was used to make french fries without properly washing, rinsing, and sanitizing the pan in between the two foods; this is cross contact because the french fries have been exposed to potential allergens.

Many people often confuse cross contact with cross contamination, but cross contact deals with the transfer of allergens – whereas cross contamination concerns the transfer of pathogens. We will discuss how methods for preventing cross contact can differ from those used to prevent cross contamination. For example, sanitizer will kill bacteria but will not kill an allergen. To remove allergens from a surface, scrub it with soap and hot water.

ASK: What examples of cross contact can you think of?

FEEDBACK:

Cross contact:

- peanut butter sandwiches and turkey sandwiches prepared on the same cutting board – peanut butter sandwiches made first and the cutting board was not washed
- airborne flour particles fall onto a food prep table that is not cleaned before preparing food

SAY: The baking sheet needs to be properly cleaned, rinsed, and sanitized between uses. Wiping is not enough to remove potentially baked on allergens. Remember, heat does not kill an allergen. Protect allergen-free foods from allergen-containing foods during storage, preparation, and service.

ASK: Thinking through the whole flow of food process, what are some other methods we could use to prevent cross contact?

DO: Flip to a new page of flip chart paper. Write "Cross Contact" at the top and record participant responses.

FEEDBACK:

- Follow proper handwashing procedures, and wash hands before preparing allergen-free foods. Also, wash hands between handling allergen-free foods and foods that contain allergens.
- Wear single-use gloves and change appropriately.
- Use a clean apron when preparing allergen-free food.
- Wash, rinse, and sanitize all utensils, equipment, and food contact surfaces before and after each use.
- Isolate allergen-free ingredients in storage and during preparation.
- If possible, designate an allergy-free zone in the kitchen. When working with multiple food allergies, set up procedures to prevent cross contact within the allergy-free zone.
- Prepare allergen-free foods first, wrap and label them (with name, color code, or stickers), and place them on the top storage shelf until service.
- Use clean potholders and oven mitts for allergen-free foods to prevent cross contact.
- Use color coded utensils, equipment, etc., or designate equipment and utensils for allergen-free foods.

Instructor's Note: Be sure to mention any examples from above that are not mentioned by participants.

SAY: School nutrition employees are responsible for maintaining safe food throughout all steps of the food process. Contamination can happen at any time. Training staff in prevention methods is very important.

SHOW SLIDE: *Preventing Food Contamination*

ACTIVITY: *Preventing Food Contamination*

Instructions: Participants will work with partners (if there is an odd number of people a group of three can be done). Participants will use the **Preventing Food Contamination** handout in their Participant's Workbook. The participants will write a possible scenario for each type of contamination in the "Scenario" section of the chart. They will then switch workbooks with their partners (in the case of a group of three they will rotate the books

once). Refer participants back to the **Common Causes of Food Contamination** handout in the Participant's Workbook if they need ideas. The partner will then write out possible prevention methods for the scenarios. After the activity, ask volunteers to give one example of a contamination scenario and how it was prevented. Make sure all three contamination types are covered. This activity will take 10 minutes (3 minutes for writing scenarios, 3 minutes for writing prevention methods, and 4 minutes for reporting).

Example: Cross Contamination

Scenario – Employee is making sandwiches with bare hands.

Possible Prevention Method – Employee washes hands and puts on gloves before making sandwiches.

Preventing Food Contamination

Instructions: Write a possible scenario for each type of contamination in the "Scenario" section of the chart. After you write the scenarios, you will trade workbooks with your partner who will write possible prevention methods for your scenarios. There may be more than one correct prevention method.

Type of Contamination	Scenario	Prevention
Cross Contamination		
Chemical Contamination		
Cross Contact		

Common Causes of Food Contamination

Cross Contamination: the transfer of bacteria or viruses from hand-to-food, food-to-food, or equipment and food contact surfaces-to-food	
Example	**How to Avoid It**
Hand-to-Food: lifting the trash can lid with your hands, then preparing food without first washing your hands	• Wash hands properly, frequently, and at appropriate times. • Wash hands before putting on single-use gloves and change gloves frequently. • Wear gloves or use utensils when handling ready-to-eat foods. • Cover cuts, sores, and wounds with a clean bandage and a single-use glove. • Keep fingernails short, unpolished, and clean. • Do not wear jewelry, except for a plain band such as a wedding ring. • Do not allow sick employees to work.
Food-to-Food: thawing raw meat in the refrigerator above fresh produce and allowing the meat juices to drip on the produce	• Separate meats and other raw products from ready-to-eat foods during receiving, storage, and preparation. • Separate different types of raw animal foods, such as eggs, fish, meat, and poultry, from each other except when combined in recipes. Store foods according to final cook temperature. • Separate unwashed fruits and vegetables from washed fruits and vegetables and other ready-to-eat foods. • Place food in covered containers or packages, except during cooling. Store in the refrigerator or cooler. • Thaw food properly. • Properly clean, rinse, and sanitize all food contact surfaces between contact with raw products and fresh or ready-to-eat products.
Equipment or Food Contact Surfaces-to-Food: using a can opener for several food items without cleaning it between uses OR using a cutting board to cut raw meat but not cleaning and sanitizing it before cutting apples	• Use dry, cleaned, and sanitized equipment and utensils for food preparation. • Clean and sanitize worktables, equipment, and cutting boards after each use and before beginning a new task. • Use separate cutting boards for different foods (e.g. raw meats and fresh produce). This practice also applies to different types of meat (e.g. using separate cutting boards to cut chicken and then to prepare beef). If separate cutting boards are not available, wash, rinse, sanitize, and air-dry the cutting board between tasks. • Clean and sanitize surfaces that are handled often, such as refrigerator and freezer handles. • Use only dry, cleaned, and sanitized containers for food storage. Cover all foods well and label and date them. • Maintain a fresh bucket of cleaning solution and a fresh bucket of sanitizing solution in the work area so that cleaning and sanitizing can be done easily.

Example	How to Avoid It
Chemical Contamination: when chemicals unintentionally come in contact with food	
Spraying sanitizer on the counter next to an uncovered pot of food cooking on the stove	• Store chemicals away from food products. • Do not use chemicals in an area when you are preparing food. • Store chemicals in original containers with labeling information. • Never use food containers for chemicals or chemical containers for food. • Use chemicals only for recommended purposes. • Use Safety Data Sheets (SDS) provided by the manufacturer to ensure chemicals are stored and used properly. • Check the concentration of the sanitizing solution with a sanitizing test kit to make sure it is at appropriate levels to sanitize. • Teach employees how to use chemicals.
Cross Contact: when an allergen accidentally transfers from one food containing an allergen to another food or surface that does not contain the allergen	
Using a knife to spread peanut butter for peanut butter and jelly sandwiches and then using the same knife to cut a turkey sandwich without cleaning and sanitizing between uses	• Follow proper handwashing procedures, and wash hands before preparing allergen-free foods. Also, wash hands between handling allergen-free foods and foods that contain allergens. • Wear single-use gloves. • Use a clean apron when preparing allergen-free food. • Wash, rinse, and sanitize all utensils, equipment, and food contact surfaces before and after each use. • Isolate allergen-free ingredients in storage and preparation. • If possible, designate an allergy-free zone in the kitchen. When working with multiple food allergies, set up procedures to prevent cross contact within the allergy-free zone. • Prepare allergen-free foods first, wrap and label them (with name, color code, or stickers), and place them on the top storage shelf until service. • If possible, use clean potholders and oven mitts for allergen-free foods to prevent cross contact. • Use color coded utensils, equipment, etc., or designate equipment and utensils for allergen-free foods.

SAY: For this activity, you will need a partner. If there is an uneven number, a group can have three people in it. Turn in your workbook to the **Preventing Food Contamination** handout. I will give you 3 minutes to write a possible scenario for each type of contamination in the "Scenario" section of the chart. After you write the scenarios, you will trade workbooks with your partner who will write possible prevention methods for your scenarios. For the group of three, you will rotate once. You will have 3 minutes to write the preventions methods. There may be more than one correct prevention method. You can use the **Common Causes of Food Contamination** handout in your Participant's Workbook for ideas for scenarios and prevention techniques.

DO: Allow 3 minutes for participants to write scenarios. Have the participants trade workbooks and give them 3 minutes to write prevention methods. After the participants have completed filling out the handout, call for volunteers to read out a scenario and prevention method. Remember to cover all the contamination types.

SAY: Great job everyone! We will now discuss one of the best prevention methods for all three types of contamination – proper cleaning, rinsing, and sanitizing.

Objective: Explain how properly cleaning, rinsing, and sanitizing can prevent food contamination.

SHOW SLIDE: *Cleaning, Rinsing, and Sanitizing*

SAY: Now that we are familiar with the three types of food contamination and how to prevent them, it is important to begin with proper cleaning, rinsing, and sanitizing of all food contact surfaces, equipment, and utensils. We will discuss how general cleaning, rinsing, and sanitizing can prevent cross contamination, chemical contamination, and cross contact. Refer to the **Proper Cleaning, Rinsing, and Sanitizing Procedures** handout in your Participant's Workbook to follow along with the steps, if you would like.

There are four steps to proper cleaning and sanitizing for food contact surfaces:

Step 1: Wash/scrub surface with detergent solution to clean.

Step 2: Rinse surface with clean water to remove debris and detergent.

Step 3: Sanitize surface using a sanitizing solution safe for food contact surfaces and mixed at the concentration specified on the manufacturer's label.

Step 4: Allow items to air-dry.

These steps are effective at preventing some instances of food contamination. The washing/scrubbing and rinsing steps are effective at removing an allergen from a food contact surface. Washing and rinsing steps are also important preventative steps of cross contamination because they remove food particles, which makes sanitizer ineffective. The sanitizer step, when done properly, can reduce the chance of chemical

and cross contamination. If the chemical sanitizer is prepared to the proper concentration, the sanitizer will not form a residue and will be effective. For chlorine, this means that the sanitizer concentration needs to be between 50-100 ppm, and for quaternary ammonium, the concentration should be as indicated by the manufacturer's use directions. For cross contamination, a properly prepared sanitizer is effective in killing microorganisms that may be on that surface. Air-drying is also important to prevent cross contamination as you reduce the risk of reintroducing microorganisms from a drying cloth.

Proper Cleaning, Rinsing, and Sanitizing Procedures

Step 1: **Wash surface with detergent solution to clean.** Tip: Replace detergent solutions when the water becomes dirty or has debris in it.	
Step 2: **Rinse surface with clean water to remove debris and detergent.**	
Step 3: **Sanitize surface using a sanitizing solution safe for food contact surfaces and mixed at the concentration specified on the manufacturer's label.** Tip: Check the concentration of the sanitizing solution with the appropriate sanitizing test kit to make sure it is at correct levels to sanitize as specified by the Safety Data Sheet (SDS) sheet. Chlorine: concentration between 50-100 ppm Quaternary ammonium: concentration as indicated by the manufacturer's direction	
Step 4: **Allow items to air-dry.**	

SHOW SLIDE: *Washing Utensils*

SAY: Please turn to the **Cleaning and Sanitizing Food Contact Surfaces SOP (Sample)** for more details on different methods for properly cleaning, rinsing, and sanitizing. Along with cleaning food contact surfaces such as tables, other equipment used to prepare food like utensils, cutting boards, and pans can be cleaned using a dishmachine or three-compartment sink. These steps are the same for washing dishes – clean, rinse, sanitize, and air dry.

For a three-compartment sink, each sink has a separate function.

1. In the first compartment, wash with a clean detergent solution at or above 110 °F or at the temperature specified by the detergent manufacturer.
2. In the second compartment, rinse with clean water.
3. In the third compartment, sanitize with a sanitizing solution mixed at a concentration specified on the manufacturer's label or by immersing in hot water at or above 171 °F for 30 seconds. Test the chemical sanitizer concentration by using an appropriate test kit.

For a dishmachine:

- Check with the dishmachine manufacturer to verify that the information on the data plate is correct.
- Refer to the information on the data plate for determining wash, rinse, and sanitization (final) rinse temperatures; sanitizing solution concentrations; and water pressures, if applicable.
- Follow manufacturer's instructions for use.
- Ensure that food contact surfaces reach a surface temperature of 160 °F or above if using hot water to sanitize.

Monitor and record temperatures and sanitizer concentrations for a three-compartment sink or dishmachine. When done correctly, general cleaning, rinsing, and sanitizing of food contact surfaces is an effective tool to reduce the risk of food contamination in your school nutrition program.

Cleaning and Sanitizing Food Contact Surfaces SOP (Sample)

PURPOSE: To prevent foodborne illness by ensuring that all food contact surfaces are properly cleaned and sanitized.

SCOPE: This procedure applies to school nutrition employees involved in cleaning and sanitizing food contact surfaces.

KEY WORDS: Food Contact Surface, Cleaning, Sanitizing

INSTRUCTIONS:

1. Train school nutrition employees on using the procedures in this SOP.
2. Follow state or local health department requirements.
3. Follow manufacturer's instructions regarding the use and maintenance of equipment and use of chemicals for cleaning and sanitizing food contact surfaces. Refer to Storing and Using Poisonous or Toxic Chemicals SOP.
4. If state or local requirements are based on the FDA *Food Code*, wash, rinse, and sanitize food contact surfaces of sinks, tables, equipment, utensils, thermometers, carts, and equipment:
   - Before each use
   - Between uses when preparing different types of raw animal foods, such as eggs, fish, meat, and poultry
   - Between uses when preparing ready-to-eat foods and raw animal foods, such as eggs, fish, meat, and poultry
   - Any time contamination occurs or is suspected
5. Wash, rinse, and sanitize food contact surfaces of sinks, tables, equipment, utensils, thermometers, carts, and equipment using the following procedure:
   - Wash surface with detergent solution.
   - Rinse surface with clean water.
   - Sanitize surface using a sanitizing solution mixed at a concentration specified on the manufacturer's label.
   - Place wet items in a manner to allow air-drying.

Cleaning and Sanitizing Food Contact Surfaces SOP (Sample), continued

6. If a 3-compartment sink is used, setup and use the sink in the following manner:
   - In the first compartment, wash with a clean detergent solution at or above 110 °F or at the temperature specified by the detergent manufacturer.
   - In the second compartment, rinse with clean water.
   - In the third compartment, sanitize with a sanitizing solution mixed at a concentration specified on the manufacturer's label or by immersing in hot water at or above 171 °F for 30 seconds. Test the chemical sanitizer concentration by using an appropriate test kit.
7. If a dishmachine is used:
   - Check with the dishmachine manufacturer to verify that the information on the data plate is correct.
   - Refer to the information on the data plate for determining wash, rinse, and sanitization (final) rinse temperatures; sanitizing solution concentrations; and water pressures, if applicable.
   - Follow manufacturer's instructions for use.
   - Ensure that food contact surfaces reach a surface temperature of 160 °F or above if using hot water to sanitize.

MONITORING:

School nutrition employees will:

1. During all hours of operation, visually and physically inspect food contact surfaces of equipment and utensils to ensure that the surfaces are clean.
2. In a 3-compartment sink, on a daily basis:
   - Visually monitor that the water in each compartment is clean.
   - Take the water temperature in the first compartment of the sink by using a calibrated thermometer.
   - If using chemicals to sanitize, test the sanitizer concentration by using the appropriate test kit for the chemical.
   - If using hot water to sanitize, use a calibrated thermometer to measure the water temperature. It should be at or above 171 °F. Refer to Using and Calibrating Thermometers SOPs at www.theicn.org.
3. In a dishmachine, on a daily basis:
   - Visually monitor that the water and the interior parts of the machine are clean and free of debris.

Cleaning and Sanitizing Food Contact Surfaces SOP (Sample), continued

- Continually monitor the temperature and pressure gauges, if applicable, to ensure that the machine is operating according to the data plate.
- For hot water sanitizing dishmachine, ensure that food contact surfaces are reaching the appropriate temperature at or above 160 °F by placing a piece of heat sensitive tape on a smallware item or an irreversible registering temperature indicator on a rack and running the item or rack through the dishmachine.
- For chemical sanitizing dishmachine, check the sanitizer concentration on a recently washed food-contact surface using an appropriate test kit.

CORRECTIVE ACTION:

1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. Wash, rinse, and sanitize dirty food contact surfaces. Sanitize food contact surfaces if it is discovered that the surfaces were not properly sanitized. Discard food that comes in contact with food contact surfaces that have not been sanitized properly.
3. In a 3-compartment sink:
   - Drain and refill compartments periodically and as needed to keep the water clean.
   - Adjust the water temperature by adding hot water until the desired temperature is reached.
   - Add more sanitizer or water, as appropriate, until the proper concentration is achieved.
4. In a dishmachine:
   - Drain and refill the machine periodically and as needed to keep the water clean.
   - Contact the appropriate individual(s) to have the machine repaired if the machine is not reaching the proper wash temperature indicated on the data plate.
   - For a hot water sanitizing dishmachine, retest by running the machine again. If the appropriate surface temperature is still not achieved on the second run, contact the appropriate individual(s) to have the machine repaired. Wash, rinse, and sanitize in the 3-compartment sink until the machine is repaired or use disposable single service/single-use items if a 3-compartment sink is not available.
   - For a chemical sanitizing dishmachine, check the level of sanitizer remaining in bulk container. Fill, if needed. “Prime” the machine according to the manufacturer’s instructions to ensure that the sanitizer is being pumped through the machine. Retest. If the proper sanitizer concentration level is not achieved, stop using the machine and contact the appropriate individual(s) to have it repaired. Use a 3-compartment sink to wash, rinse, and sanitize until the machine is repaired.

Cleaning and Sanitizing Food Contact Surfaces SOP (Sample), continued

VERIFICATION AND RECORD KEEPING:

School nutrition employees will record monitoring activities and any corrective action taken on the Food Contact Surfaces Cleaning and Sanitizing Log. The school nutrition manager will verify that school nutrition employees have taken the required temperatures and tested the sanitizer concentration by visually monitoring school nutrition employees during the shift and reviewing, initialing, and dating the Food Contact Surfaces Cleaning and Sanitizing Log. The log will be kept on file for at least 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**: _____

Conclusion

SAY: We have completed Lesson 3. We learned a lot about the different types of food contamination and methods that can prevent them. Remember that you have the **Common Causes of Food Contamination** handout in your workbook. Use this resource to help you think of possible scenarios that you could experience in your school nutrition program and create methods for preventing them. We will discuss this further in Lesson 4.

ASK: Do you have any questions before we move on?

Lesson 4: Developing a Food Safety Program

LESSON-AT-A-GLANCE

Time	Topic	Activity	Materials
Introduction			
<5 minutes	Lesson Objectives		
Objective: Describe how to use HACCP to develop a food safety plan for a school nutrition program.			
25 minutes	Using HACCP principles to create a food safety plan	HACCP Analysis Case Study	
Objective: Describe how to use the Process Approach to help develop a food safety plan for a school nutrition program.			
15 minutes	Using the Process Approach to create a food safety plan	Process Approach Category	
Objective: Explain how to use Standard Operating Procedures and logs as part of a food safety plan for a school nutrition program.			
10 minutes	Using Standard Operating Procedures and Logs to create a food safety program		
Total Time: 50 minutes			

Lesson 4: Developing a Food Safety Program

Introduction

SHOW SLIDE: *Lesson 4: Developing a Food Safety Program*

SAY: The Child Nutrition Reauthorization Act of 2004 implemented the requirement for a food safety program based on Hazard Analysis and Critical Control Point (HACCP) principles for school nutrition programs. In 2010, the Richard B. Russell National School Lunch Act was amended and included the food safety requirements established in the Healthy, Hunger-Free Kids Act of 2010 and the Child Nutrition and WIC Reauthorization Act of 2004. It requires School Food Authorities (SFAs) to implement a food safety program based on HACCP principles. This food safety program must apply to all locations where food is stored, prepared, or served throughout the school. The food safety principles outlined in the U.S. Department of Agriculture (USDA) guidance for implementation of comprehensive food safety programs in schools participating in the National School Lunch Program (NSLP) need to be included in the food safety program.

There are two components to a food safety program:

- Written Standard Operating Procedures
- Written food safety program for each school based on the process approach to HACCP

The food safety plan for your school will contain both HACCP principles and Standard Operating Procedures (SOPs). Using both SOPs and the process approach to HACCP will prevent, eliminate, or reduce the occurrence of foodborne illness risk factors within your operation. The food safety principles explain how to do the right thing, the right way, at the right time.

DO: Refer participants to the lesson objectives in the Participant's Workbook.

SAY: After this lesson, you will be able to

- describe how to use HACCP to develop a food safety plan for a school nutrition program,
- describe how to use the Process Approach to help develop a food safety plan for your school nutrition program, and
- explain how to use Standard Operating Procedures and logs as part of a food safety plan for a school nutrition program.

Objective: Describe how to use HACCP to develop a food safety plan for a school nutrition program.

SHOW SLIDE: *HACCP*

SAY: Hazard Analysis Critical Control Point, or HACCP, is a specific approach for identifying food safety hazards. It involves finding potential food safety issues in your program and implementing preventative measures. Please turn in your Participant's Workbook to the **HACCP Principles** handout and follow along as we discuss the seven steps or principles for HACCP.

1. Conduct a hazard analysis
2. Determine critical control points (CCPs)
3. Establish critical limits
4. Establish monitoring systems
5. Identify corrective actions
6. Keep records
7. Review and verify your overall food safety program periodically

HACCP Principles

	Completed	Comments

1. Conduct a Hazard Analysis

How is the menu item prepared?

Prepared and served without cooking

Prepared and cooked for same day service

Prepared, cooked, held, reheated and served

Check your menu:

What items are similarly prepared?

What items are TCS foods?

Where is the food safety hazard during the process?

Where may a food safety hazard occur for each item?

2. Determine Critical Control Points (CCPs)

Find points in process where hazards can be prevented, eliminated, or reduced to safe levels.

Some foods may have more than one.

3. Establish Critical Limits

Minimum or maximum limit that must be met to prevent, eliminate, or reduce the hazard to a safe level.

4. Establish Monitoring Systems

Determine best way to check procedures and monitor for consistency.

Identify who will monitor and how often.

	Completed	Comments

5. Identify Corrective Actions

Establish steps that must be taken when a critical limit is not met. _____

6. Keep Records

Maintain your HACCP plan. _____

Maintain all documentation during the HACCP creation process. _____

Keep all records: _____

- Monitoring activities _____
- Corrective action _____
- Equipment is in working condition _____
- Working with suppliers _____

7. Review and verify your overall food safety program periodically

Is your plan working as intended? _____

Plan to evaluate: _____

- Monitoring charts _____
- Records _____
- How you performed your hazard analysis _____

Review all records when updating HACCP plan _____

SAY: The first step is to thoroughly inspect your school nutrition operation and analyze it for hazards that are present in your operation. These hazards could be biological, such as bacteria from raw meat; chemical, such as sanitizer being stored above food in the dry storage; and physical, such as fingernail polish from an employee. It is important to think through your entire foodservice production from delivery to service for any potential hazards.

Once the hazard analysis is complete, the next step is to establish measures to prevent them. The key application of HACCP principles is using critical control points and critical limits to monitor and control the identified hazards. Critical control points, or CCPs, are the points in the foodservice operation where there is an identified potential hazard that is not already controlled by an SOP. Critical control points provide control during preparation, cooking, holding, serving, cooling, and reheating. Critical limits are the measures taken to eliminate, prevent, or reduce the food safety hazard identified by the CCP. For example, you identify that a recipe contains raw ground beef; this means there is a potential bacterial hazard from undercooked meat causing a foodborne illness. This becomes a critical control point for this recipe. The critical limit for this recipe is that ground beef must be cooked to a minimum of 155 °F to ensure it reaches the appropriate internal temperature to kill the bacterial hazard. The CCP may be in multiple steps in the foodservice process: cooking, holding, reheating, etc.

ASK: What are some potential critical control points you can think of in your school nutrition program, and what critical limits would you put into place to eliminate them?

FEEDBACK:

- Delivered cold food:
  - If cold food is delivered in the temperature danger zone, there is the potential for bacterial growth.
  - Critical limit: Cold food must be delivered at 41 °F or below.
- Hot holding foods before service:
  - CCP: Food held in the temperature danger zone allows bacterial growth.
  - Critical limit: Keep hot food at 135 °F or higher to keep it out of the temperature danger zone.

SAY: Those are very good examples of determining hazards, figuring out critical control points, and establishing critical limits to reduce or eliminate the hazard. The HACCP principles do not stop here though. After figuring out where hazards exist and how to control them, it is essential to create a monitoring program with written corrective actions in case a critical limit has not been met; these are the next two principles. Returning to our earlier example of raw ground beef in a recipe, an employee should monitor the food by using a thermometer to take the temperature to ensure that it reaches 155 °F. If during the monitoring process it is determined that the food is only 145 °F, the corrective action is to return the food to the oven to continue cooking until it has reached the required temperature.

The next step of HACCP involves recording your procedures concerning critical control points. It is vital to write down all monitoring performed and corrective actions taken. It is important to have documentation of food safety practices because in the case of a foodborne illness outbreak; if it was not recorded, it did not happen. You need documentation of procedures when trying to determine the cause of a foodborne illness or an allergic reaction. Please turn in your workbook to the **Cooking and Reheating Temperature Log**. You can use logs like these to help monitor and document your food safety practices. Notice that this log provides instructions for monitoring and recording food temperature as you cook or reheat it. The log records the date and time, food item, internal cooking temperatures, corrective actions, employee initials, and verifying person. This is all important information to have in the case of a foodborne illness outbreak. Returning to our earlier example of the ground beef recipe and using this log, the employee should record the time and date they took the temperature and the food item they were checking. The employee would also record the temperature reading (145 °F), along with the corrective action of placing the food back into the oven for further cooking when it was determined that the recipe did not meet the correct critical limit. The employee would then initial the log and follow up with their manager or director. We will discuss the use of logs further when we discuss Standard Operating Procedures.

The final step for using HACCP principles in your food safety program is to review and verify that the procedures put into place are working. It is important to routinely verify that your food safety program is working. This could include talking to staff, checking logs, and testing established food safety best practices. This step helps identify any problems or practices that may need to be revised.

Cooking and Reheating Temperature Log

Instructions: Record product name, time, the two temperatures, and any corrective action taken on this form. The school nutrition manager will verify that school nutrition employees have taken the required cooking temperatures by visually monitoring school nutrition employees and preparation procedures during the shift and reviewing, initialing, and dating this log daily. Maintain this log for a minimum of 1 year.

Date and Time		Food Item	Internal Temperature	Internal Temperature	Corrective Action Taken	Initials	Verified By/ Date

SHOW SLIDE: *HACCP Analysis Case Study*

ACTIVITY: *HACCP Analysis Case Study*

Instructions: In their groups, participants will review the **HACCP Analysis Case Study** handout in the Participant's Workbook. Break the class into three (3) groups, assign each group one of the three (3) scenarios. The participants will read the case study as if they are a kitchen manager. They will use the HACCP principles to identify areas of concern or improvement in the kitchen, and write out how they would use the HACCP principles to put a food safety plan in place. The groups will then discuss the answers to the case study. This activity will take 15-20 minutes.

SAY: We are now going to apply what you have learned about HACCP to some scenarios in a kitchen. Please turn in your workbook to the **HACCP Analysis Case Study** handout. I will count you off into three groups and assign each group one of the three scenarios.

Imagine you are the manager of the Happy Smiles Elementary Schools kitchen. You have decided to improve your food safety plan and are observing your kitchen to determine any areas of concern or improvement. After you read your scenario, identify the areas of concern or improvement and use the seven HACCP principles to improve your plan to preserve the safety of the food.

DO: Allow participants 10 minutes to complete this activity. Walk around the room assisting groups as needed. This Instructor's Manual provides possible answers to the case study.

HACCP Analysis Case Study Possible Answers:

Scenario 1: Delivery

As you walk to the back, you see a delivered box of frozen chopped onions and bell peppers sitting in the hallway. The completed Receiving Log has only a time and date upon arrival written on it, and an invoice with a signature is on top of the box. The time on the log was 2 hours ago.

Areas of Concern or Improvement	Ways to Use the HACCP Principles to Make a Food Safety Plan
Upon delivery, frozen onions and bell peppers were not properly inspected for safety. No delivery temperature was recorded, and afterward, the food was not properly handled to ensure safety. Food would have to be discarded.	Determine critical control points (CCPs). • Food needs to be delivered at correct temperatures. • Food should be stored immediately to preserve temperature safety. Establish critical limits. • Refrigerated food should be delivered at 41 °F or below. • Frozen food should be frozen solid with no signs of thawing, such as large ice crystals or wet boxes. Establish monitoring system. • Allot time for employee to receive food, check temperatures and for other signs of contamination before receiving, and record on log. • Allot time for employee to put away delivery correctly to ensure proper inventory storage and rotation. Identify corrective actions. • Reject food delivered at incorrect temperatures and record this. Keep records. • Receiving Foods log Review and verify your overall food safety program periodically. • Manager should check the logs and review the invoices to ensure proper temperature control is being monitored.

Scenario 2: Preparation and Holding You then walk into the production area. The menu for the day includes tacos that contain raw, ground beef. The taco beef is in steam table pans heated in the oven. After 20 minutes, the employee removes the taco meat from the oven and places them in hot wells on the serving line.	
Areas of Concern or Improvement	**Ways to Use the HACCP Principles to Make a Food Safety Plan**
Employee did not take the final cooking temperature of the beef putting it on the serving line.	Determine critical control points (CCPs). • Taco meat needs to reach the proper reheating temperature, as it is a pre-cooked product. Establish critical limits. • Beef should reach 155 °F for at least 15 seconds. • Taco beef should be held at 135 °F on the serving line. Establish monitoring system. • Employee needs to take and record the temperature of the beef after it is cooked and before it goes on the serving line. Identify corrective actions. • If taco beef does not reach 155 °F, it should be returned to the oven until the correct internal temperature is met. • If taco meat does not stay above 135 °F, on the serving line, reheat food to 165 °F for at least 15 seconds. Keep records. • Cooking and Reheating Foods log • Hot Holding Temperature log Review and verify your overall food safety program periodically. • Manager should review log to ensure cooking, reheating, and holding temperatures are taken and recorded.

Scenario 3: Cooling After serving lunch, there are leftovers. The chili is dumped all into one 6 inch steam table pan and placed on the middle shelf in the walk-in cooler. No temperatures are taken and the log is not used.	
Areas of Concern or Improvement	**Ways to Use the HACCP Principles to Make a Food Safety Plan**
Chili should be placed in shallow dishes and cooled on the top shelf of the refrigerator. The temperature of the food needs to be monitored and recorded during cooling.	Determine critical control points (CCPs). • Food needs to stay within proper cooling time and temperature parameters to be safe. Establish critical limits. • Cool hot food from 135 °F to 70 °F within 2 hours. • Cool hot food within a total of 6 hours from 135 °F to 41 °F (if step one is achieved). Establish monitoring system. • Employee will take temperature of foods at designated times to ensure food is cooling correctly. Employee will record these temperatures and times. Identify corrective actions. • If either cooling step is not achieved, reheat the food to 165 °F for 15 seconds and restart the cooling process, or discard. Keep records. • Cooling Foods log Review and verify your overall food safety program periodically. • Manager should check the logs to make sure methods used are cooling food properly. Check employee schedules to ensure there is time for an employee to monitor cooling food.

SAY: You will now present your food safety plan for your scenario to the class.

DO: Call on each group and have them report on their scenario. Include any aspects not mentioned from the provided answers.

SAY: Good job everyone! Using HACCP principles to determine possible hazards can help you develop your food safety program. HACCP controls specific hazards, but for non-specific hazards, Standard Operating Procedures cover the remainder of the food safety program. We will discuss SOPs further in a moment, but first we are going to talk about the Process Approach, which helps when performing a hazard analysis for your school nutrition program.

Objective: Describe how to use the Process Approach to help develop a food safety plan for a school nutrition program.

SHOW SLIDE: *Process Approach*

DO: Refer participants to the **The Process Approach** handout.

SAY: The Food and Drug Administration (FDA) developed a Process Approach for implementing HACCP programs. USDA adopted the Process Approach for school nutrition programs. Since federal law requires school nutrition programs to have in place a written food safety plan based on HACCP principles, the Process Approach can help determine where hazards may exist.

The Process Approach categorizes menu items into three broad preparation processes, based on the number of times food passes through the temperature danger zone. The three categories are No Cook, Same Day Service, and Complex. No Cook menu items never pass through the temperature danger zone. Same Day Service items pass through the temperature danger zone once. Complex food items pass through the temperature danger zone at least twice but may pass through it more. It is important that school nutrition employees monitor and control food temperatures at various steps in the foodservice process to ensure food safety. We will now take a more in-depth look at the different categories of menu items.

The Process Approach Handout

Process Approach Category	Temperature Danger Zone (TDZ)	Important Temperatures	Specific Best Practices	General Best Practices
No Cook	Does not go through the TDZ	Food must be kept at or below 41 °F	• Follow standardized recipes. • Verify food temperatures during cold holding.	• Purchase foods from approved sources. • Receive foods properly. • Store foods properly, including separating food from chemicals. • Use good personal hygiene. • Follow proper handwashing practices. • Prevent cross contamination. • Limit time food is held in the temperature danger zone. • Use a sanitized, calibrated thermometer to take food temperatures. • Serve food so that there is no bare hand contact. Use appropriate utensils, deli paper, or single-use gloves. • Restrict ill employees from working with food.
Same Day Service	Food goes through the TDZ once	• Heat food to the required internal temperature • Cool food using proper cooling methods.	Verify food temperatures during hot holding.	
Complex	Food goes through the TDZ two or more times	*Two times through TDZ* • Cook food to the required internal temperature • Cool food using proper cooling methods *Three times through TDZ* • Cook food • Cool food • Reheat food to 165 °F for at least 15 seconds • Hold food at 135 °F or above	Verify food temperatures during cooking, cooling, reheating, and hot holding.	

SHOW SLIDE: *No Cook*

SAY: No Cook menu items do not enter the temperature danger zone. As you can see on the slide, fruit salad would be an example of a no cook category item as it never is cooked, and therefore, does not pass through the temperature danger zone. The CCP for the fruit salad would be at the holding step where the temperature needs to be kept at 41 °F or below. Another example of this would be cut tomatoes for a salad bar. The cut tomatoes are stored and served cold. It is essential to keep No Cook food items at 41 °F or below. As you can see on the slide, the temperature control for the fruit salad is cold holding it at 41 °F or below.

ASK: What are some menu items in your school nutrition program that would be classified as No Cook foods?

FEEDBACK:

- Cold sandwiches
- Romaine salad
- Cut melon

SHOW SLIDE: *Same Day Service*

SAY: Same Day Service menu items enter the temperature danger zone one time. These foods are prepared hot and served hot on the same day. They pass through the temperature danger zone while they are being prepared. An example of a Same Day Service food item would be baked chicken breast. There would be two CCPs. They are cooked to 165 °F, passing through the temperature danger zone. The chicken would then be held for serving at 135 °F or above to make sure they do not fall into the temperature danger zone. As you can see on the slide, temperature control is marked for both cooking and holding the baked chicken.

ASK: What are some menu items in your school nutrition program that would be classified as Same Day Service foods?

FEEDBACK:

- Hamburgers
- Hot sandwiches
- Pizza

SHOW SLIDE: *Complex Food Preparation*

SAY: Complex menu items pass through the temperature danger zone at least twice, but possibly more times depending on how the food is prepared. These food items may be prepared hot then cooled, but also may be reheated which would take them through the temperature danger zone a third time. An example would be beef and bean tamale pie. This food item travels through the temperature danger zone three times as it is cooked, cooled, and then reheated. There are four CCP's for this food item at the cooking, cooling, reheating, and holdings steps. As you can see on the slide, temperature controls are important during cooking, cooling, reheating, and hot holding.

Another example could be turkey roasts that are cooked and then cooled and sliced to put on sandwiches. The turkey passes through the temperature danger zone twice – once during cooking and once during cooling.

ASK: What are some menu items in your school nutrition program that would be classified as Complex Process foods?

FEEDBACK:

- Lasagna
- Turkey roast that is cooled and used on sandwiches
- Leftovers

SAY: Depending on your school nutrition program, the same recipe may fall into different categories. Preparation steps or equipment used may change the process for foods considered Same Day Service in some schools and Complex in other schools. For example, chili prepared with dried beans that are cooked the day before, cooled, and then reheated the next day for service would be considered a Complex food. However, if the chili recipe uses canned beans and everything is cooked for service the same day, it would be considered a Same Day Service Process food item.

SHOW SLIDE: *Process Approach Category*

ACTIVITY: *Process Approach Category*

Instructions: Participants will use the **Process Approach Category** handout for this activity. The participants will write down 5-10 foods commonly served in their school lunch program. They will then decide based on the processes used in their school nutrition operation, which Process Approach Category the food item should be categorized. Examples are provided on the handout. Ask a couple of volunteers to share a food item and its Process Approach category. This category should take 5 minutes.

Process Approach Category

Instructions: Write 5-10 foods commonly served in your school lunch program. Decide based on the processes used in your school nutrition operation which Process Approach Category the food item should be categorized. Examples are provided to get you started.

Menu Item	No Cook	Same Day Service	Complex Food
Peas and Carrots		X	
Romaine Salad	X		
Lasagna			X
Spaghetti w/ Meat Sauce		X	X

SAY: Please turn in your Participant's Workbook to the **Process Approach Category** handout. You will write down 5-10 foods commonly served in your school lunch program. You will then decide based on the processes used in your school nutrition operation, which Process Approach Category the food item should be categorized. Examples are provided for you on the handout.

DO: Allow participants 2-3 minutes to present their menu items. Ask a couple of volunteers to share a food item and its Process Approach category.

SAY: You did a wonderful job on this activity! Regardless of what category the food item falls into, it is important to follow standardized recipes, and monitor and control food temperatures to maintain food safety. The final part of developing a food safety plan involves using Standard Operating Procedures and logs to maintain general food safety practices.

Objective: Explain how to use Standard Operating Procedures and logs as part of a food safety plan for a school nutrition program.

SHOW SLIDE: *Standard Operating Procedures*

SAY: As we have discussed, HACCP controls specific hazards. Standard Operating Procedures provide guidance for non-specific hazards. Written SOPs provide a guide of practices and procedures that give direction to school nutrition employees on critical tasks for keeping food safe. This would entail general food safety practices.

SOPs support the Process Approach to HACCP. As part of your food safety plan, your school nutrition program needs written SOPs. Important information to include on a Standard Operating Procedure includes the following information:

- Purpose
- Temperature control points
- Instructions
- Monitoring procedures
- Corrective actions
- Suggested record keeping documents
- Verification procedures

DO: Have the participants locate the **Personal Hygiene SOP (Sample)** in the Participant's Workbook. As you read each section of the SOP, explain its purpose.

Personal Hygiene SOP (Sample)

PURPOSE: To prevent contamination of food by school nutrition employees.

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

KEY WORDS: Personal Hygiene, Cross Contamination, Contamination

INSTRUCTIONS:

1. Train school nutrition employees on using the procedures in this SOP.
2. Follow state or local health department requirements.
3. Follow the Employee Health Policy. (Employee Health Policy is not included in this resource.)
4. Report to work in good health, clean, and dressed in clean attire. Report any illnesses to your manager.
5. Change apron when it becomes soiled.
6. Wash hands properly, frequently, and at the appropriate times.
7. Keep fingernails trimmed, filed, and maintained.
8. Do not wear artificial fingernails and fingernail polish.
9. Wear single-use gloves if artificial fingernails or fingernail polish are worn.
10. Do not wear any jewelry except for a plain ring such as a wedding band.
11. Treat and bandage wounds and sores immediately. When hands are bandaged, single-use gloves must be worn.
12. Cover a lesion containing pus with a bandage. If the lesion is on a hand or wrist, cover with an impermeable cover such as a finger cot or stall and a single-use glove. Show a supervisor any lesion before working.
13. Eat, drink, or chew gum only in designated break areas where food or food contact surfaces may not become contaminated.
14. Taste food the correct way:
    - Place a small amount of food into a separate container.
    - Step away from exposed food and food contact surfaces.
    - Use a teaspoon to taste the food. Remove the used teaspoon and container to the dish room. Never reuse a spoon that has already been used for tasting.
    - Wash hands immediately.
15. Wear suitable and effective hair restraints while in the kitchen.

Personal Hygiene SOP (Sample), continued

MONITORING:

1. The kitchen supervisor will inspect employees when they report to work to be sure that each employee is following this SOP.
2. The kitchen supervisor will monitor that all school nutrition employees are adhering to the personal hygiene policy during all hours of operation.

CORRECTIVE ACTION:

1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. Discard affected food.

VERIFICATION AND RECORD KEEPING:

The school nutrition manager will verify that school nutrition employees are following this SOP by visually observing the employees during all hours of operation. The school nutrition manager will complete the Food Safety Checklist daily. School nutrition employees will record any discarded food on the Damaged or Discarded Product Log. The Food Safety Checklist and Damaged or Discarded Product Logs are to be kept on file for a minimum of 1 year.

DATE IMPLEMENTED: _____ **BY**: _____

DATE REVIEWED: _____ **BY**: _____

DATE REVISED: _____ **BY**: _____

SAY: Please turn to the **Personal Hygiene SOP (Sample)** in your Participant's Workbook. Use this SOP as a reference as we walk through the parts of an SOP. The key sections in an SOP are: purpose, scope, key words, instructions, monitoring, corrective actions, and verification and record keeping.

The **purpose statement** indicates why the Standard Operating Procedure is important and how it fits into the food safety program. On the **Personal Hygiene SOP (Sample)**, you can see that the purpose of this SOP is to prevent contamination of food by school nutrition employees.

The **scope** of the SOP details people, activities, and equipment to which the SOP would pertain.

The **key words** provide an at-a-glance idea of the topics covered in the SOP.

The **instructions** provide a step-by-step description of procedures that should be followed. As you can see with the **Personal Hygiene SOP (Sample)**, 15 detailed steps lay out different procedures for effective personal hygiene in a school nutrition operation.

ASK: As it is important to tailor SOPs for your schools nutrition program, is there anything in the 15 instructions that your school would need to add or take off this list?

DO: Give participants a couple moments to think and answer.

SAY: Good answers! **Monitoring** is the process of ensuring an operation is following Standard Operating Procedures and meeting important times and temperatures for food. Documenting times and temperatures is part of the monitoring process. For personal hygiene, the manager, supervisor, or appointed leader is responsible for checking to make certain the operation is following personal hygiene instructions throughout the workday.

ASK: Are there any monitoring procedures that your school would need to add or take off this list?

DO: Give participants a couple moments to think and answer.

SAY: Good answers! **Corrective Actions** are specific, pre-planned actions that must be taken if a Standard Operating Procedure is not followed or if a time/temperature is not met. For example, if a cooking temperature is not met, additional cooking would be needed. For personal hygiene, corrective action may include retraining an employee who is out of compliance and/or discarding food that was handled by an employee not following correct personal hygiene procedures.

ASK: Are there any correct actions that your school would need to add or take off this list?

DO: Give participants a couple moments to think and answer.

SAY: Good answers! **Record Keeping** is needed to document monitoring and corrective actions taken. Records should be retained for 1 year (or longer if required by your state). For personal hygiene, this can be done using a log or employee training sign-in sheet.

ASK: Are there any record keeping procedures that your school would need to add or take off this list?

DO: Give participants a couple moments to think and answer.

SAY: Good answers! **Verification** is the procedure that confirms that a food safety program is working according to plan. The supervisor or kitchen manager plays an important role in verification by checking and ensuring that monitoring and documentation is done. The verification process will identify changes that need to be made in the food safety program so that it will be effective. For personal hygiene, the school nutrition manager or director verifies that all employees are following good personal hygiene practices.

ASK: Are there any verification procedures that your school would need to add or take off this list?

DO: Give participants a couple moments to think and answer.

SAY: The Institute provides a variety of sample SOPs like the **Personal Hygiene SOP (Sample)**. To find them on the ICN website, just type "SOP" in the search function on the main landing page. It is important to tailor SOPs to your personal school nutrition program. For example, if your operation only has a three compartment sink, it would not be necessary to have information on using a dishmachine in your cleaning and sanitizing SOP. ICN makes them available in Word for this purpose. You also need to revisit your food safety plan regularly to verify that the components are still relevant to your school nutrition program. We are going to practice this with our next activity. It is essential that all school employees be trained on SOPs annually to help them understand their responsibilities in the school nutrition program in maintaining a safe food environment.

SHOW SLIDE: *Using Logs*

SAY: A final piece of the food safety program is something we have touched on already today, and that is using logs to help record and document food safety practices. Please feel free to refer back to the **Cooking and Reheating Temperature Log** if you would like to see an example log again. Logs provide a record of food safety information throughout the day. They generally require information such as date, time, needed

temperatures, corrective actions, initials of employees completing the logs, and a verification signature. More information is provided on the logs as needed. Logs can also help monitor equipment such as a thermometer calibration log or a refrigerator temperature log. Logs help provide the documentation needed to prove best food safety practices are being followed.

ASK: What are some situations in your school nutrition program where you would use a log?

FEEDBACK:

- Cleaning and Sanitizing Log
- Cooking Foods Log
- Reheating Foods Log
- Cooling Foods Log
- Damaged or Discarded Product Log
- Hot and Cold Holding Temperature Log
- Production Log
- Receiving Log
- Refrigeration Log
- Thermometer Calibration Log

Conclusion

SAY: SOPs and logs work hand in hand with HACCP principles to maintain food safety in your school nutrition program. Do not let all the information presented about developing a food safety program overwhelm you. ICN provides a starting point for reviewing your school nutrition program to help you determine areas around which you need to develop a food safety plan. Please turn in your Participant's Workbook to the **Food Safety Checklist**. This document along with sample SOPs and logs are on the ICN website. The **Food Safety Checklist** walks through and inspects the entire school nutrition program from personal hygiene, different food storage sites, food preparation, service, holding, cooling, and much more. You can determine whether items are in or out of compliance in your program, and then work with the SOPs and logs provided on the ICN website to begin development of your program.

Food Safety Checklist

Date _____ Observer _____

Directions: 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.

PERSONAL HYGIENE	Yes	No	Corrective Action
• Employees wear clean and proper uniform including shoes.	☐	☐	_____
• Effective hair restraints are properly worn.	☐	☐	_____
• Fingernails are short, unpolished, and clean (no artificial nails).	☐	☐	_____
• Jewelry is limited to a plain ring, such as wedding band.	☐	☐	_____
• Hands are washed properly, frequently, and at appropriate times.	☐	☐	_____
• Burns, wounds, sores or scabs, or splints and water-proof bandages on hands are bandaged and completely covered with a single-use glove while handling food.	☐	☐	_____
• Eating, drinking, and chewing gum are allowed only in designated areas.	☐	☐	_____
• Employees use disposable tissues when coughing or sneezing and then immediately wash hands.	☐	☐	_____
• Employees appear in good health.	☐	☐	_____
• Hand sinks are unobstructed, operational, and clean.	☐	☐	_____
• Hand sinks are stocked with soap, disposable towels, and warm water.	☐	☐	_____
• A handwashing reminder sign is posted.	☐	☐	_____
• Employee restrooms are operational and clean.	☐	☐	_____

FOOD PREPARATION	Yes	No	Corrective Action
• All food stored or prepared in facility is from approved sources.	☐	☐	_____
• Food equipment utensils and food contact surfaces are properly washed, rinsed, and sanitized before every use.	☐	☐	_____
• Frozen food is thawed under refrigeration, cooked to proper temperature from frozen state, or in cold running water.	☐	☐	_____
• Thawed food is not refrozen.	☐	☐	_____
• Preparation is planned so ingredients are kept out of the temperature danger zone to the extent possible.	☐	☐	_____
• Food is tasted using the proper procedure.	☐	☐	_____
• Procedures are in place to prevent cross contamination.	☐	☐	_____
• Food is handled with suitable utensils, such as single-use gloves or tongs.	☐	☐	_____
• Food is prepared in small batches to limit the time it is in the temperature danger zone.	☐	☐	_____

• Clean reusable towels are used only for sanitizing equipment and surfaces and not for drying hands, utensils, or floor.	☐	☐	_____
• Food is cooked to the required safe internal temperature for the appropriate time. The temperature is tested with a calibrated food thermometer.	☐	☐	_____
• The internal temperature of food being cooked is monitored and documented.	☐	☐	_____

HOT HOLDING	Yes	No	Corrective Action
• Hot holding unit is clean.	☐	☐	_____
• Food is heated to the required safe internal temperature before placing in hot holding.	☐	☐	_____
• Hot holding units are not used to reheat time/temperature control for safety foods.	☐	☐	_____
• Hot holding unit is pre-heated before hot food is placed in unit.	☐	☐	_____
• Temperature of hot food being held is at or above 135 °F.	☐	☐	_____
• Food is protected from contamination.	☐	☐	_____

COLD HOLDING	Yes	No	Corrective Action
• Refrigerators are kept clean and organized.	☐	☐	_____
• Temperature of cold food being held is at or below 41 °F.	☐	☐	_____
• 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 FIFO (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
• Temperatures of dry storage area is between 50 °F and 70 °F 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.	☐	☐	_____

• The FIFO (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.	☐	☐	_____

CLEANING AND SANITIZING	Yes	No	Corrective Action
• Three-compartment sink is properly set up for ware washing.	☐	☐	_____
• Dishmachine is working properly (gauges and chemicals are at recommended levels).	☐	☐	_____
• Water is clean and free of grease and food particles.	☐	☐	_____
• Water temperatures are correct for washing and rinsing.	☐	☐	_____
• If heat sanitizing, the utensils are allowed to remain immersed in 171 °F water for 30 seconds.	☐	☐	_____
• If using a chemical sanitizer, it is mixed correctly and a sanitizer strip is used to test chemical concentration.	☐	☐	_____
• Smallware and utensils are allowed to air dry.	☐	☐	_____
• Wiping cloths are stored in sanitizing solution while in use.	☐	☐	_____

UTENSILS AND EQUIPMENT	Yes	No	Corrective Action
• All small equipment and utensils, including cutting boards and knives, are cleaned, sanitized, and allowed to air dry before use.	☐	☐	_____
• Work surfaces are cleaned and sanitized before use.	☐	☐	_____
• Thermometers are cleaned and sanitized after each use.	☐	☐	_____
• Thermometers are calibrated on a routine basis.	☐	☐	_____
• Can opener is cleaned and sanitized before use.	☐	☐	_____
• Drawers and racks are cleaned and sanitized before use.	☐	☐	_____
• Clean utensils are handled in a manner to prevent contamination of areas that will be in direct contact with food or a person's mouth.	☐	☐	_____

LARGE EQUIPMENT	Yes	No	Corrective Action
• Food slicer is cleaned and sanitized after every use.	☐	☐	_____
• Exhaust hood and filters are clean.	☐	☐	_____

GARBAGE STORAGE AND DISPOSAL	Yes	No	Corrective Action
• Kitchen garbage cans are clean and kept covered.	☐	☐	_____
• Garbage cans are emptied as necessary, but at least daily.	☐	☐	_____
• Boxes and containers are removed from site.	☐	☐	_____
• Loading dock and area around dumpster are clean, and dumpsters have tight fitting lids.	☐	☐	_____

PEST CONTROL

	Yes	No	Corrective Action
• Outside doors have screens, are well-sealed, and are equipped with self-closing devices.	☐	☐	_____
• No evidence of pests is present.	☐	☐	_____
• There is a regular schedule of pest control by a licensed pest control operator.	☐	☐	_____

Wrap Up

LESSON-AT-A-GLANCE

Time	Topic	Activity	Materials
Introduction			
15 minutes	• Review • Manager's Corner: Food Safety Basics • Post-Assessment • Certificates	ABC's Review	• Flip chart paper • Markers • Post-Assessment • Pre/Post-Assessment answer key • Certificates • Evaluations
Total Time: 15 minutes			

SHOW SLIDE: *Food Safety Basics Review*

SAY: Thank you for taking part in the *Food Safety Basics* training. We have discussed a lot about food safety and the steps needed to practice handling food safely throughout all steps of the food process. *Food Safety Basics* empowers you to prevent foodborne illness and encourages you to apply the information you have learned to provide safe food in your school nutrition program. We are going to do a final activity to test what you have learned today.

ACTIVITY: *ABC Review*

Instructions: Write the alphabet on two pieces of flip chart paper. There should be enough room beside each letter to write a word. Split the class into two groups and have them line up single file in front of the flip chart. Give the person in the front of the line the marker. When you say go, the two teams will race against each other to fill out the flip chart with ideas and concepts from the day's training. For example, participants may put the word "cleaning" for the letter "C" or "temperatures" for the letter "T." For tough letters like "X" and "Z," participants can use a word that incorporates that letter such as "exclude" and "analyze." They do not have to fill it out in alphabetical order, and they will continue to fill out the charts until the alphabet is complete. The first team to complete the flip chart paper wins. Participants can use any charts on the walls, the Participant's Workbook, and each other for help. This activity will take about 10 minutes.

Instructor's Note: Depending on size of class, another flip chart and team may be needed. Groups should be no larger than 6–8 people. Make sure to check your roster before class to determine how many teams you will need for this activity.

SAY: I am going to count you off into two groups. Ones please line up single file at the front of the flip chart paper on the left, and Twos please line up on the right. I am going to give the person in front a marker. When I say, "Go," write a word next to any letter that relates to a concept learned in today's training. For example, you may put the word "cleaning" for the letter "C" or "temperatures" for the letter "T." For tough letters like "X" and "Z," you can use a word that incorporates that letter such as "exclude" and "analyze". You do not have to go in alphabetical order.

The front person will then pass the marker to the next person in line, and go to the back of the line. The person with the marker will write the next word, pass the marker to the person behind them, go to the back of the line, and so on until the alphabet is complete. The two teams will race against each other to fill out the flip chart first with ideas and concepts from the day's training. You can use any charts on the walls, the Participant's Workbook, and each other for help.

DO: Allow 5 minutes to complete the wrap up activity. After this activity, answer any questions on the Bike Rack.

SAY: Good job everyone! I have one final resource from ICN that I would like to show you.

SHOW SLIDE: *Manager's Corner: Food Safety Basics*

DO: Locate the *Manager's Corner: Food Safety Basic*s in the toolbox. Review this document.

SAY: ICN has developed *Manager's Corner: Food Safety Basics* to help managers and supervisors train school nutrition employees. The trainings are 15 minutes in length, and many of the topics we addressed today are included. It can be found on the ICN website. Every lesson plan contains

- a learning objective,
- a statement explaining the importance of the topic,
- a list of materials,
- instructions on how to present the information,
- questions to ask staff, and
- additional resources to strengthen or refresh the knowledge of the director/manager.

ICN also encourages you to use your Participant's Workbook as a "go-to" resource for your school nutrition program. The information provided conveys best food safety practices for a school nutrition program.

SHOW SLIDE: *Post-Assessment*

DO: Distribute the **Post-Assessment** to the participants.

SAY: We have one final activity. I am going to pass out the post-assessment. Please complete this to the best of your abilities to see how much you have learned and retained. Please make sure to write the same indicator that you used for the pre-assessments on your post-assessment.

DO: Allow 10 minutes for the participants to complete the post-assessment. Also, pass out the pre-/post-assessment answer key and review the answers with the group. Distribute the Certificates of Completion.

SHOW SLIDE: *Thank You!*

SAY: Thank you for attending today's training. The Institute of Child Nutrition partners with USDA's Food and Nutrition Service (FNS) to develop and support training events like our session today. We would like your feedback on this training program.

DO: Provide participants the training evaluation form. Make sure all participants have signed the Attendee Roster. Make sure everyone has signed the sign-in sheet.

SAY: I have a Certificate of Completion for each of you for completing *Food Safety Basics* training. Keep this record in your files. Congratulations and thank you for participating today!

DO: Provide attendees a Certificate of Attendance.

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