



Introduction and Trainer Tips

Introduction

Foodservice personnel are the single most critical element in assuring food safety in a foodservice operation. Contents of this resource specifically focus on the importance of consistently using thermometers in Child Nutrition Programs. This resource is designed to teach staff how to:

- Select thermometers
- Purchase thermometers
- Calibrate thermometers
- Use thermometers appropriately to monitor temperatures
- Document temperatures
- Develop corrective action as needed to meet temperature standards

The *2001 Food Code* is a reference document for regulatory agencies responsible for overseeing food safety in foodservice establishments. The *Food Code* is updated periodically. State, local, and tribal jurisdictions may use the *Food Code* as a model for their sanitation codes.

Recommended temperatures listed in this resource reflect the *2001 Food Code* and may be different than State or local requirements. This resource should be adapted to include State and local public health department code requirements and school district policies and procedures.

Trainer Tips

The *Thermometer Information Resource* contains four lessons. Lessons, activities, and videotape are designed to provide foodservice personnel at various levels with an up-to-date source of information about the use of thermometers and importance of monitoring and maintaining safe temperatures in a foodservice operation.

Within each lesson, “short lessons” of logically grouped information and activities are suggested in order to meet objectives of the lesson. Depending on the learning needs of participants and/or time constraints, the instructor may choose to present one or more lessons in their entirety, or a short lesson that may only require 7–30 minutes to complete. Following is an overview of the course contents with the estimated length of each section, to help you plan your training.

Lesson 1 Thermometers—Tools of the Trade

(Approximately 1 hour)

Objectives

1. Describe how temperature relates to bacterial growth in food.
2. Identify the appropriate thermometer to use for each step in the food flow process and for specific food products.
3. List advantages and disadvantages for various types of thermometers.

Short Lessons

(Approximately 10–30 minutes each in length)

Content Areas

Temperature and Bacterial Growth, Key Point 1	10 minutes
Temperature and Bacterial Growth, Key Point 2	10 minutes
Tools of the Trade, Key Point 1	10 minutes
Tools of the Trade, Key Point 2	30 minutes

Lesson 2 Purchasing Thermometers

(Approximately 45 minutes)

Objectives

1. Determine thermometer needs for each school kitchen or food production facility.
2. Develop and use specifications to purchase and evaluate thermometers.

Short Lessons

(Approximately 20–25 minutes each in length)

Content Areas

Determining Thermometer Needs, Key Point 1	25 minutes
Developing Thermometer Specifications, Key Point 2.....	20 minutes

Lesson 3 Calibrating Bimetallic Stemmed Thermometers

(Approximately 40 minutes)

Objectives

1. Explain the importance of thermometer calibration.
2. Demonstrate the ice water method for calibrating thermometers.
3. Demonstrate the boiling water method for calibrating thermometers.
4. Document calibration of thermometers.

Short Lessons

(Approximately 10 – 20 minutes each in length)

Content Areas

Importance of Calibration, Key Point 1	10 minutes
Methods of Calibration, Key Point 2	15–20 minutes
Documenting Calibration, Key Point 3	10 minutes

Lesson 4 Taking and Documenting Temperatures

(Approximately 2 hours)

Objectives

1. Take and record temperatures during steps in the food flow process: receiving, storing, preparing/cooking, holding, transporting, serving, cooling, reheating, and cleaning/sanitizing.
2. Document temperatures using appropriate forms.
3. Identify appropriate corrective actions to be taken if temperature standards are not met.
4. Clean, sanitize, and store thermometers appropriately.

Short Lessons

(Approximately 7–30 minutes each in length)

Content Areas

Taking Food Temperatures, Key Point 1	30 minutes
Taking Storage/Work Area Temperatures, Key Point 2	10 minutes
Taking Equipment Temperatures, Key Point 3	10 minutes
Cleaning and Sanitizing Thermometers, Key Point 4	8 minutes
Storing Thermometers, Key Point 5	7 minutes
Documenting Temperatures, Key Point 6	15 minutes
Taking Corrective Action, Key Point 7	25 minutes
Summarizing Lessons 1–4	20 minutes

The accompanying video, *Your Guide to Thermometers in Foodservice*, is intended to reinforce the instructional content of lessons. The trainer has the flexibility of combining instruction with complementary video segments, or using instruction alone.

Whenever possible, it is highly recommended that participants have the opportunity to “practice” what is being taught. Sample activities are included within each lesson. Also included are sample forms for taking a thermometer inventory, recording thermometer calibration, documenting temperatures, and developing corrective actions (Handouts 2, 6, 7, 8, 9, 10, and 11). The final activity is a fun and interactive game (Trainer Resource 2) called “Heat It Up!”, which serves as a final summary of the content in Lessons 1–4. A list of resources and supporting references is included at the end of the resource.

Advance Preparation

It is recommended that the trainer assemble the following materials prior to teaching lessons:

- Thermometer Toolkit (Assembling this toolkit is a handy means to keep thermometers and other materials in a single and easy-to-transport container.)
 - Plastic container
 - Marking pens in two colors
 - Masking tape
 - Thermometers (or pictures of thermometers, which can be downloaded from the accompanying CD-ROM)
 - Refrigerator/cooler thermometer
 - Freezer thermometer
 - Storage thermometer
 - Bimetallic stemmed thermometer
 - Digital stemmed thermometer (thermistor)
 - Thermocouple thermometer
 - Infrared thermometer
 - Single use temperature indicators (T-Sticks® and adhesive thermometers)
- Videotape, *Your Guide to Thermometers in Foodservice*
- VCR and monitor
- In-Service Training Attendance Roster (Trainer Resource 1)
- Additional materials as suggested within the lesson being taught

Be sure to review the list of materials prior to instruction. For example: Lesson 1 suggests having on hand *Food Safety Mini-Posters* that are available from the National Food Service Management Institute (NFSMI). A printable copy of the mini-posters can be downloaded from the accompanying CD-ROM or laminated copies can be ordered from www.nfsmi.org.

Closing Each Lesson

At the close of each lesson, the trainer should do the following:

- Review lesson objective(s) and key point(s) covered during instruction
- Ask participants if they have any questions or comments related to the topic
- Announce when and where the next training session will be held (if applicable)
- Document training by having each individual who attended the entire session sign an attendance roster. A copy of an in-service training attendance roster is included as Trainer Resource 1. This roster may be used for documenting school district training and School Nutrition Association (SNA) certification credits. At the first training session, you may want to emphasize the importance of documentation and tie it into the documentation that participants do as part of their job.
- Thank all participants for attending

Note: All temperatures used in the *Thermometer Information Resource* are in Fahrenheit. If temperatures need to be converted to Celsius, the following formula would be used:

$$(^{\circ}\text{F} - 32) \times \frac{5}{9} = ^{\circ}\text{C}$$

Some common equivalents for temperatures used in this resource:

$^{\circ}\text{F}$	$^{\circ}\text{C}$
32	0
41	5
135	57
155	68
160	71
165	74
180	82

In-Service Training Attendance Roster

School District: _____

School: _____

Date: _____

Training Session: _____

Trainer: _____

Sign-in:

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____
- 25. _____
- 26. _____
- 27. _____
- 28. _____
- 29. _____
- 30. _____