

# No Time To Train

## Using and Calibrating a Bi-Metallic Stemmed Thermometer

**Lesson Participants:** School Nutrition Assistants

**Type of Lesson:** Face-to-face training session

**Objective:** For food service assistants to be able to accurately demonstrate how to calibrate and use a thermometer.

### **Materials Needed:**

- Trainer's Script
- Pens and Pencils (one for each employee)
- Example Scenario (one for each employee)
- 1 or 2 accurately calibrated thermometers
- 1 or 2 cups of ice
- 1 or 2 cups of water
- A picture showing the temperature danger zone. (See page 5 of this lesson or download from [http://www.olemiss.edu/depts/nfsmi/Information/temp\\_miniposter.pdf](http://www.olemiss.edu/depts/nfsmi/Information/temp_miniposter.pdf))



# Trainer's Script:

## Using and Calibrating a Bi-Metal Thermometer

### Introduction: (1 minute)

**SAY:** For the next 10 minutes we will be talking about calibration of thermometers. Proper calibration of thermometers is the only way to get accurate temperatures of food. Calibration and correct use of thermometers ensures that the temperatures being taken of foods are acceptable. This is extremely important with potentially hazardous foods. At the end of this lesson you will be able to demonstrate how to use and calibrate a bi-metal thermometer.

### Temperature Danger Zone: (2 minutes)

**SAY:** Before you can use and calibrate a thermometer, you must know what temperature you are looking for with specific potentially hazardous foods (PHF). We want cold foods below 41 degrees and we want hot foods above 135 degrees. Anything in between 41 and 135 degrees is known as the temperature danger zone. When PHF temperatures are found within this range, harmful bacteria can grow and multiply, which could cause food-borne illnesses.

**DO:** Show picture of temperature danger zone and ask if there are any questions.

### Calibration: (5 minutes)

**SAY:** Now that we know what temperature we are looking for when we take food temperatures, we can move on to calibration and use of the thermometer. When we calibrate a thermometer we will be using the ice-point method. When using ice-point method we want the thermometer to read 32 degrees. I will now show you how to calibrate a thermometer using this method. The steps to Calibrate a Thermometer are:

1. Fill a container with crushed or chipped ice.
2. Add water slowly until it overflows.
3. Add more ice until it is packed tightly to the bottom of the container, allowing excess to overflow.
4. Insert the stem of the thermometer at least two inches into the container and allow it to stabilize for 5 minutes. Note: It is important that the tip of the thermometer not touch the bottom of the container.
5. If the temperature reading is 32 degrees F., the thermometer is accurately calibrated. If necessary to adjust the thermometer, do so by small increments and allow it to stabilize before making any additional adjustments.

**DO:** Take your cups of ice and add the water to them according to the instructions above. Next, place your thermometer into the ice water. Wait for 1 minute and have every employee come and look at the thermometer.

**SAY:** Is this thermometer correct?

**DO:** Show the thermometer to employees.

**SAY:** Right, this is correct (assuming that the thermometer is properly calibrated at 32 degrees!). We can now use this thermometer. If it was not correct we would need calibrate it to the correct temperature or throw it away if it is not able to be properly calibrated. Every thermometer should be calibrated once every morning before food preparation begins, every time a thermometer is dropped, and any time a thermometer is exposed to extreme heat.

### **Example Scenario: (2 minutes)**

**DO:** Pass out example scenario, pens and pencils.

**SAY:** Now we will go over an example scenario. I will pass out the handout. Read the directions and complete the scenario. We will go over once everyone is done.

### **Training Documentation:**

**DO:** Complete the training report at the end of this lesson, obtain participant signatures, and file in *HACCP Section 2-9: Training*.



## Example Scenario

### What's Wrong?

**Directions:** In the space provided what did the employee do wrong?

Maggie is responsible for calibrating all the thermometers used to check food temperatures. She collects all of the thermometers from the storage area and then gets a large cup, fills it with ice and then cold water. She waits a little while for it to get cold. Next, she places the thermometers stem down into the ice water. Two of the thermometers read 32 degrees and four did not. Maggie then reports on the Daily Production Plan that she has calibrated and checked the accuracy of all the thermometers. She then proceeds to place the thermometers back in their storage area to be used for the day.

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# TEMPERATURE MINI-POSTER

Sanitize in a 3 compartment sink

Heat sanitize  
3rd sink  
171-195°F for  
30 seconds

Rinse  
2nd sink  
110°F

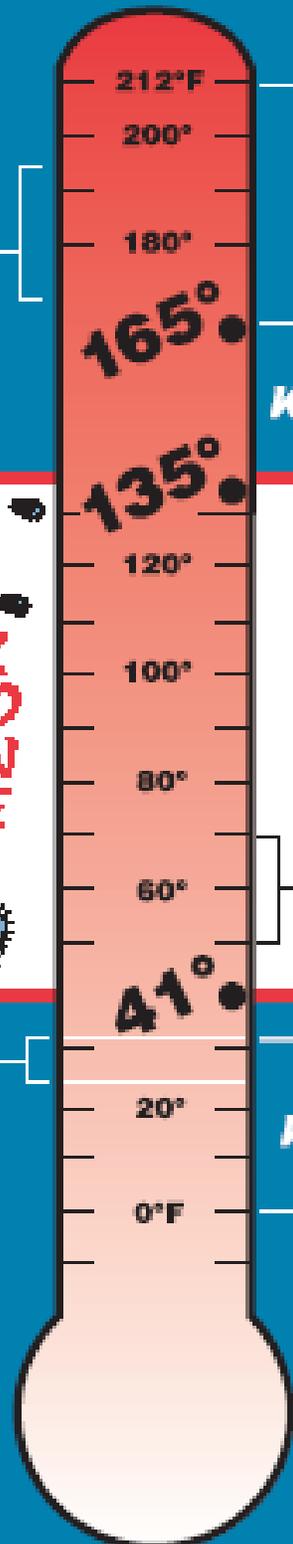
Wash  
1st sink  
110°F

*Use A  
Thermometer!*

Quick chill storage  
(26 - 32°F)



National Food Service  
Management Institute  
The University of Mississippi  
800-821-3054  
www.nfsmi.org  
ET16-97(B)



Boiling

Reheat — 165° for 15 seconds

*Keep Hot Foods Hot!*

**THE  
DANGER  
ZONE**

*Bacteria  
Multiply*

Store dry food (50 - 70°F)

(Thaw in Refrigerator)  
32°F Freezing

*Keep Cold Foods Cold!*

Store Frozen Food

Always follow local  
& State requirements.

For further information, see  
*Serving It Safe, 2nd ed.*

Revised 2004

**FOOD SAFETY AND HACCP TRAINING REPORT**

**(Complete this report and File in HACCP Section 2-9: Training)**

**TRAINING TITLE:** **No Time To Train: Using and Calibrating a Bi-Metallic Stemmed Thermometer**

**DATE:** \_\_\_\_\_

**LOCATION:** \_\_\_\_\_

**INSTRUCTOR:** \_\_\_\_\_

**Training Agenda/Outline is attached:**  **Yes**  **No**

PARTICIPANT NAME	SCHOOL