



APRIL DATA COLLECTION TECHNIQUES

Objective: Understand the uses of various lunchroom data collection techniques. Practice tray waste data collection.

Participants learn why research methodologies and data management are keystones of a Smarter Lunchroom Makeover and how various lunchroom data collection techniques show progress toward lunchroom goals. They then practice analyzing tray waste examples from photographs (main lesson) and in person (Booster Shot).



LESSON 9: Data Collection Techniques

MATERIALS

- Trainer's Script
- SLIDE PRESENTATION: *No Time to Train: April (Data)*
 - Projection capability, screen
- WORKSHEET: *Tray Waste Data Entry Form* (page 113)
- Pencils/Pens

Replace paper materials with the Tray Waste Smartphone app if desired. Contact ben@cornell.edu for details.

→ DO:

- Cue up the **No Time to Train: April (Data) Slide presentation.**

■ SHOW SLIDE: April (Data), slide 1: title page

● SAY:

The words “**research**” and “**data**” often create uneasiness in newcomers to the Smarter Lunchrooms Movement. That fear is misplaced—these *valuable tools* can maximize the effectiveness of our efforts in the lunchroom. Best of all, they are *straightforward* and even easy to implement. This month we *tear down the hype* and see **why** and **how** to add a new data collection technique to our Smarter Lunchrooms toolkit.

■ SHOW SLIDE: Data, slide 2: What is “data”?

● SAY:

In simple terms, **research methods** means making sure our interventions are well-documented, consistently maintained, and able to be replicated. **Data management** means keeping careful, timely records so our before-and-after comparisons show valid results, which we can then use to make the best choices for future changes.

In a practical sense, **Data is proof** that our changes made a difference.

■ SHOW SLIDE: Data, slide 3: What does proof look like?

● SAY:

We use data to measure changes in overall participation, consumption of target foods, food waste (food students select but throw away), and the proportion of reimbursable meals versus competitive foods sold.

Knowing precisely how our environmental changes affect these numbers helps us make informed choices about future changes. It also gives us success stories to share with families, administration, and each other.



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■ **SHOW SLIDE:** Data, slide 4: How do we generate this proof?

■ **SAY:**

By comparing records from **before and after** we make a change to the lunchroom environment, we can calculate changes in the amount and types of foods sold in the lunchroom as a result of the interventions. Because sales, production, and tray waste records are the most commonly used data tools, we'll focus on them.

Records can be collected on paper or computer format, but they need to be entered into a **computer spreadsheet** to more easily compare the numbers.

For example, if production records show we need to order 10% more salad mix after we reposition the salad bar and add colorful utensils, we can reasonably assume that the changes caused a 10% increase in salad sales. Similarly, if our sales records show a 5% increase in reimbursable meal sales after the serving staff starts prompting students to include sides and milk with their a la carte entrées, we can reasonably assume the prompts influenced the students to start buying whole meals.

■ **SHOW SLIDE:** Data, slide 5: Tray Waste Records

■ **SAY:**

Tray waste is the best way to know what kids actually eat. It means recording what percentage of selected food gets thrown away, which then lets us calculate what was eaten. **It is the only way to know whether our efforts to encourage kids to select more target foods result in them actually eating them.**

Don't be intimidated or grossed out; this is actually a straightforward process that yields incredibly useful information. It can be done in person in real time or by taking photos and evaluating them later. There is even a Smartphone app for this, which is really popular when students help with the data collection! Results are then entered into a computer spreadsheet for analysis. We will practice using the photo method today.

■ **SHOW SLIDE:** Data, slide 6: Overview

■ **SAY:**

We'll use the B.E.N. Center's quarter-estimate system. Basically, tray waste measures mean **visually estimating** and recording what **remains** on the tray (**wasted food**) in order to then calculate what was eaten. It helps us determine what percentage of selected food made it into the students.

The process:

- * Tray wastes days: 2–3 days before and 2–3 days after changes are made
- * Need 150–200 trays from throughout the day
- * Weigh full servings of each food offered that day (so we don't have to measure food from the trays themselves!)
- * During lunch service, set up a work station for measuring tray waste in real time, or photograph trays for evaluation later



LESSON 9: Data Collection Techniques continued

- * Look at tray, visually estimate what foods were selected and what **remains** (how much was **wasted**):
none, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, or all of it
 - Enter 0 when none was wasted
 - Enter 1 when $\frac{1}{4}$ was wasted
 - Enter 2 when $\frac{1}{2}$ was wasted
 - Enter 3 when $\frac{3}{4}$ was wasted
 - Enter 4 when all was wasted
- * Record that number on the data collection sheet
- * Enter handwritten records into computer spreadsheet later

■ SHOW SLIDE: Data, slide 7: Tray Waste Data Entry Form

● SAY:

Here is a sample data sheet, once it's filled in and entered into a spreadsheet.

Since tray waste data is so important for decreasing waste and increasing consumption, we will now practice evaluating some sample trays.

→ DO:

- Point out the fields for data entry on the form and slide:
 - Researcher name, affiliation
 - Location (school)
 - Food items offered & initial weights (average serving weight)
 - Date and lunch period
 - Tray numbers across the top
 - Wasted food (# of quarters remaining)
 - Write 0-1-2-3-4 in real time and convert to 0-.25-.5-.75-1 later
 - *Important: DO NOT enter "0" in empty fields. ONLY enter "0" if an item was selected and completely consumed ("0 quarters wasted")*

● SAY:

Whoops! Double-check data entry sheets afterward. Can you spot the entry errors in trays 6, 10, and 11? What should be done to "clean" this data? (Pause)

Answer: There are "3"s. These should be converted to quarters ➔ .75.

Remember to carefully enter the data in a spreadsheet afterward. Check for typos and errors. Fix them where they occur.



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→ **DO:**

- Distribute **Tray Waste Data Entry forms** and pens/pencils.

🗣 **SAY:**

Use your **Tray Waste Data Entry** form to evaluate what was **wasted** on each of the following sample trays.

■ **SHOW SLIDE: Data, slide 8: Sample tray 1**

🗣 **SAY:**

What amount was wasted of each of the selected foods? Record your observations on the Tray 1 column of your sheet. (30 seconds)

■ **SHOW SLIDE: Data, slide 9: Sample tray 1 answers**

🗣 **SAY:**

There is about $\frac{1}{4}$ of the soup and sandwich left, so mark a "1" for $\frac{1}{4}$ for each of those items in the Tray 1 column. Liquids are trickier, but there looks to be about $\frac{1}{4}$ milk wasted and no juice wasted; write "1" for milk and "0" for juice.

■ **SHOW SLIDE: Data, slide 10: Sample tray 1 things to note**

🗣 **SAY:**

This tray demonstrates that photographs can be harder to gauge than real-life trays. However, photographs are faster, especially if you only have one person doing data collection. Do your best.

■ **SHOW SLIDE: Data, slide 11: Sample tray 2**

🗣 **SAY:**

What amount was wasted of the selected foods? Record your observations on the tray 2 column of your sheet. (30 seconds)

■ **SHOW SLIDE: Data, slide 12: Sample tray 2 answers**

🗣 **SAY:**

None (or virtually none) of the soup and sandwich is left, so mark a "0" for 0/4 for each of those items in the Tray 2 column. It looks like the milk is gone and the juice was not opened, so write "0" for milk and "4" for juice. There are a few fruit snacks scattered on the tray and perhaps more in the bag, so mark "1."

■ **SHOW SLIDE: Data, slide 13: Sample tray 2 things to note**





LESSON 9: Data Collection Techniques continued

SAY:

Use clues such as wrappers, cartons, crumbs, puddles, and even grease and moisture spots to determine what might items have been fully consumed. Compare remains to a full serving size and estimate to the nearest ¼.

SHOW SLIDE: Data, slide 14: online resources

SAY:

More tray waste training videos can be found online at SmarterLunchrooms.org.

Please write your name on your sheet and pass it to me. We'll re-use these worksheets during this month's Booster Shot.

DO:

- Collect forms, making sure they include names. Store securely for later use.

SAY:

Thanks for trying this out today. This sort of data can help us learn even more about how our efforts are improving the lunchroom. Do you have any final questions or thoughts about this?

DO:

- Use any remaining time to facilitate a group discussion about incorporating tray waste data collection into future interventions/changes in the lunchroom.

FOLLOW-UP

Tray waste training videos are available at SmarterLunchrooms.org. Share these with the staff using an emailed link or by showing them during a staff meal or break time.



BOOSTER SHOT 9: Tray Waste Practice



This workshop gives hands-on experience in real-time tray waste data collection. If you plan to incorporate student help in data collection, consider inviting students to participate in this lesson alongside lunchroom staff, or hold an identical lesson with students at another time. Invite the same students as in other staff-student workshops from this series, or expand to include new students. Resources for recruiting and incorporating students appear on SmarterLunchrooms.org, as well as in the B.E.N. Center's lesson plans for integrating lunchroom action research into the classroom.

MATERIALS

- Trainer's Script
- WORKSHEET: *Tray Waste Data Entry Form* (page 113, or re-use forms from part 1)
- Pens/paper
- Clipboards (recommended)
- Work table
- Sample food portions (real or food models)
- 4+ sample trays (using actual meal remains or food models)
- **Or** Tray Waste Smartphone application, pre-loaded onto devices for each participant (contact ben@cornell.edu for details)

ADVANCE PREPARATION

Before the training session, create four sample trays with partially eaten foods or preserve four actual trays from the previous lunch period. Use the menu items listed on the *Tray Waste Data Entry form*. Arrange the trays in a row on a table or on separate tables. If trays are not a feasible option in the teaching space, create them ahead of time and take pictures, then present the slides during this activity. Label the sample trays #3-6.



SAY:

Today we will repeat the tray waste data collection activity using real trays. You'll see they are much easier to estimate in real life than from photographs.



DO:

- Return the **Tray Waste Data Entry Forms** from the first part of this workshop, or distribute new forms. Distribute writing utensils. Review the instructions for using the form. Answer participants' questions (if any) regarding the form.



BOOSTER SHOT 9: Tray Waste Practice continued

SAY:

There are four sample trays labeled #3-6. Examine these trays and record your observations on the data entry form. Go in any order, making sure to match your observations with the numbered columns on the form. Spend 15-30 seconds per tray.

Use the same quarter-method as last time, recording how much **remains** on the tray (how much was **wasted**):

- * Enter 0 when none was wasted
- * Enter 1 when $\frac{1}{4}$ was wasted
- * Enter 2 when $\frac{1}{2}$ was wasted
- * Enter 3 when $\frac{3}{4}$ was wasted
- * Enter 4 when all was wasted

DO:

- Allow participants to observe and record the trays (2-3 minutes, depending on the number of participants and the traffic flow).
- Direct participants to compare answers with neighbors after returning to their seats. Then ask for volunteers and compare as a whole group (**Think-Pair-Share** activity). Resolve any discrepancies.

FOLLOW-UP

Once or twice per week, leave a sample tray (using samples or real food) or a photograph of a sample tray in the staff break space, along with a Tray Waste Data Collection form. Ask participants to visually estimate amounts of food remaining/wasted. Ask them to compare answers, with the goal being to standardize participants' visual estimations before using this data collection method in the lunchroom.

