

Lesson 1.17: Storing Food Safely and Reducing Waste

Unit: Unit 1, Kitchen Skills and Smart Eating (Nutrition and Wellness) **Topic:** 1.4 Plan, Shop, Cook: Meals on a Budget **Grade:** 6 to 8 (written at grade 7; see Differentiation for the grade 6 support and grade 8 stretch) **Days:** 1 class period of 40 minutes **Room:** FACS lab with a refrigerator, freezer, and pantry (a no-kitchen version is below)

Standards

- NYS module line: NYS N&W 1. Culinary Management f) Safely store food items
- CTE theme line: CTE HSW 2. Disease Prevention b) Demonstrate the use of prevention measures such as hand washing, sanitation and waste disposal, proper food handling and storage, and environmental controls to reduce disease risk
- CTE theme line: CTE SUS 2. Environmental Management h) Explain factors to consider when assessing the environmental impact of food choices
- CTE theme line: CTE SUS 2. Environmental Management j) Examine the impacts of landfills, including toxins, leachate, and greenhouse gases, on the global community
- NYS FACS Learning Standard 1 (Intermediate), Key Idea: Students will use an understanding of the elements of good nutrition to plan appropriate diets for themselves and others. They will know and use the appropriate tools and technologies for safe and healthy food preparation.; Performance Indicator: Students apply principles of food safety and sanitation.
- CDOS Standard 3a Universal Foundation Skills: Systems
- National FCS 3.0: 14.3.3 Show the ability to select, store, prepare, and serve food that is nourishing and looks good on the plate.
- National FCS 3.0: 8.2.6 Show correct purchasing, receiving, storage, and handling of raw and prepared foods.

(Note on SUS: the Sustainability module has no line that says “food waste” in those words. Line 2. h) is the crosswalk’s line for this module line, and 2. j) is the verbatim line on landfills, which is where wasted food goes. Both are quoted exactly.)

Enduring understanding and essential question

Big idea: Where you put food when you get home decides whether it stays safe, how long it lasts, and whether the money you spent on it ends up in a meal or in the trash. **Essential question:** How much of a family’s grocery money gets thrown away, and what would stop it?

Objectives

By the end of this lesson, students will be able to:

1. (Low) Given a list of twelve common foods, sort each into the correct storage zone (refrigerator, freezer, pantry, or counter) and state the safe temperature for the refrigerator and the freezer.

2. (Mid) Given package dates and a leftover scenario, apply FIFO and the two-hour rule to decide what gets used first, what gets frozen, and what gets thrown out.
3. (High) Given a family's weekly food waste (described in a scenario), estimate the yearly cost of that waste and propose two storage habits that would cut it, with a reason for each.

Vocabulary

Tier 2 (general academic): zone, rotate, estimate, habit Tier 3 (FACS): FIFO (first in, first out), best by, use by, sell by, the two-hour rule, perishable, freezer burn, food waste, landfill. See the unit vocabulary list for Turkish, Portuguese, and Spanish.

Materials and setup

- Handout, one per student: Handout 01.17 - Where Does It Go Sort.md
- Food cards for the sort, one set per team of four: twelve cards with a food name and a picture (raw ground beef, eggs, bananas, bread, canned beans, milk, frozen peas, cooked rice leftovers, potatoes, an open jar of salsa, a bag of flour, a rotisserie chicken bought today)
- Four zone signs per team (Refrigerator, Freezer, Pantry, Counter) or four zones drawn on the handout
- A refrigerator thermometer and a freezer thermometer, if the room has them, so students can read the real numbers
- Three real packages with different date wording (best by, use by, sell by) *[Sal: pull from the FACS pantry]*
- Slides: Slides 01.17 - Storing Food Safely and Reducing Waste (outline in 05 Materials; the site renders it as a deck)
- Setup notes: Put the thermometers in the room fridge and freezer the day before so they read true by class time. Allergy check: sealed packages only.

Pre-assessment

Lesson 1.2 taught the danger zone (40 F to 140 F). The do now asks students to use it. If most can say why the fridge is set below 40 F, Step 1 is a fast review. If not, slow Step 1 down and skip the landfill slide.

Do now and hook (Time: 5 min)

On the board: "You bring groceries home. You put the milk away and leave the rotisserie chicken on the counter because you are eating it in three hours. Is that OK? Use the words danger zone in your answer."

Debrief: hands for yes and no. The answer is no; three hours in the danger zone is past the two-hour rule. Then the hook, on the screen: "The average family in this country throws away about a quarter of the food it buys [Sal: cite the USDA figure you trust; it has been reported as 30 to 40 percent of the food supply]. On a \$40 dinner budget, that is about \$10 in the trash every week. Today is about keeping that \$10."

Procedure

Step	Teacher will	Students will	Time
1. Direct instruction: the four zones and the two numbers	Show the four zones with the two numbers: refrigerator at 40 F or below, freezer at 0 F. Read the real thermometers in the room aloud. Show the zones inside the refrigerator: raw meat on the bottom shelf (drips cannot land on anything), ready-to-eat food above it, door shelves for condiments only because the door is the warmest spot. Show the pantry rule: cool, dry, dark, off the floor. Counter: only what does not spoil in a day or two (bananas, bread, potatoes, onions).	Label the four zones on the handout and write the two temperatures. Answer: “Why does raw meat go on the bottom?”	8 min
2. Learning activity: Where Does It Go sort	Teams sort the twelve food cards into the four zones. Then the second sort: the same cards by “use first, use this week, keeps for months.” Circulate; the rotisserie chicken and the cooked rice are the cards to watch.	Sort, record on the handout, and write one reason for any card the team argued about.	8 min
3. Direct instruction: dates, FIFO, leftovers	Hold up the three packages. Read the date on each and say	Copy the three date meanings and the leftover rules into	8 min

	what each phrase means: best by is about quality, not safety; use by is the last day the maker promises it is at its best, and for perishables treat it as the limit; sell by is for the store. Show FIFO with two cans: the new can goes behind the old can, so the old one comes out first. Then the leftover rules: into the fridge within two hours (one hour if the room is over 90 F); eat within three to four days; freeze if you will not; label with the date.	the boxes on the handout. Practice FIFO with two cards.	
4. Practice and debrief: the waste scenario	Read the scenario on the handout (a family that throws out half a bag of spinach, four slices of bread, and one container of leftovers each week). Teams estimate the weekly cost from the prices given, multiply by 52, and propose two storage habits that would cut it. Take three teams' habits and one yearly number aloud. Close with the landfill slide: food in a landfill makes	Estimate, multiply, write two habits with reasons. Share.	7 min

	methane, a greenhouse gas; less waste is cheaper for the family and better for everyone.		
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Questions to ask

Monitor understanding:

- The fridge thermometer reads 45 F. Is that OK? What do you do?
- Milk says “sell by Tuesday.” It is Wednesday and it smells fine. Safe or not? Which kind of date is that?
- Leftover pasta sat out from dinner at 6 until bedtime at 10. Fridge or trash?

Deepen learning:

- Why do you think stores put the newest milk at the back of the shelf?
- If a family throws away \$10 a week, what could \$520 a year have bought instead?
- What is one thing your family already does that stops waste? Where did they learn it?

Check for understanding

During Step 2, a clipboard yes or no per team on “raw meat on the bottom shelf,” “cooked leftovers in the fridge, not the pantry,” and “chicken bought today goes in the fridge, not the counter.” Three yeses is “got it.” During Step 3, thumbs on “best by is about quality, not safety.”

Closure (Time: 4 min)

3-2-1 exit card: 3 foods and where each goes, 2 of the three date phrases and what they mean, 1 storage habit you will try at home this week. Three students read one line aloud. Sort into “got it” and “needs more”; a “needs more” card on the two-hour rule gets a re-ask during the Lesson 1.20 lab, when leftovers are real.

Differentiation and supports

- ELL: the food cards have pictures; the four zones are on a slide with a photo of each; the three date phrases are shown on real packages, not just said; sentence starter for the habit: “Our family could ___ so that ___ does not get thrown away”; the words refrigerator, freezer, pantry, leftovers, and waste are on the unit vocabulary card in Turkish, Portuguese, and Spanish.
- IEP and 504 (general): the sort is physical cards, not writing; the handout has the four zones pre-drawn; the waste math is a two-step problem with the weekly cost given for anyone who needs it; extended time; the scenario can be answered aloud.
- Grade 6 support: eight food cards instead of twelve; the second sort (use first, this week, months) is done as a class; the waste scenario gives the weekly total and asks only for the yearly multiplication and one habit.

- Grade 8 stretch: teams also sort the cards by “what happens if it is stored wrong” (spoils, freezer burn, bugs, cross contamination) and write the two-hour rule as it applies to the school cafeteria line, then read one real refrigerator thermometer and write what to do if it is over 40 F (this previews CDOS 3a Systems: check, adjust, recheck).
- UDL checkpoint used: multiple means of representation (physical cards, real thermometers, real packages, and slides) and multiple means of engagement (the waste number is about the family’s own money).
- No-kitchen or no-machine alternative: the four zones become four corners of the classroom with signs; the thermometer readings come from the slide (a photo of a fridge thermometer at 38 F and one at 45 F); the packages are photos on the slides with the date wording enlarged. Everything else is the same.

Assessment

Objective	Standards met	Learning task	Assessment (formative or summative; tool)
1. Sort foods into storage zones and state the two temperatures	N&W 1. f); HSW 2. b); Std 1 PI B; National FCS 14.3.3	Sort, Step 2; handout	Formative; handout checked against the teacher key, ten of twelve cards correct is “got it”
2. Apply FIFO, the dates, and the two-hour rule	N&W 1. f); HSW 2. b); National FCS 8.2.6	Date and leftover boxes, Step 3; do now	Formative; clipboard checklist; exit card
3. Estimate the yearly cost of waste and propose two habits	SUS 2. h) and j); CDOS 3a Systems	Waste scenario, Step 4	Formative; team answer scored complete (a yearly number and two habits with reasons), partial, or missing

Objectives 1 and 2 are assessed summatively on the Unit 1 test (the storage item) and during the Lesson 1.20 lab (leftovers handled by the rules, Rubric 01 criterion 3).

Homework

None. Optional: open your refrigerator at home and find one thing on the wrong shelf. Move it. Tell me what it was.

Connections

Science: food spoilage is bacteria growing in the danger zone; the science teacher’s microbe unit and this lesson share a thermometer. Sustainability: this lesson is the seed of the Unit 6

food waste audit; the yearly waste number comes back there with real cafeteria data. Community: a local food bank's rules for donated food (dates, temperatures) are the same rules taught here. *[Sal: Island Harvest or Long Island Cares would be the local ask.]*

Sources

- NYS Middle Level CTE FACS Content Module 05, Nutrition and Wellness (nyctecenter.org, June 2018), line 1. f). Copy in 02 Standards/NYS Module PDFs/.
- NYS Middle Level CTE Theme Module 04, Health, Safety, and Wellness, line 2. b); Theme Module 06, Sustainability, lines 2. h) and 2. j). Same folder.
- NYS Learning Standards for Health, Physical Education, and Family and Consumer Sciences (1996), Standard 1, Intermediate. Wording per 02 Standards/STANDARDS CROSSWALK.md, Part A.6.
- CDOS Intermediate Standard 3a, per 02 Standards/STANDARDS CROSSWALK.md, Part A.7.
- National Standards for Family and Consumer Sciences Education 3.0 (LEAD FCS Education, 2018), competencies 14.3.3 and 8.2.6, per 02 Standards/STANDARDS SOURCES - web research.md.
- Refrigerator and freezer temperatures, the two-hour rule, and leftover timing follow the USDA Food Safety and Inspection Service consumer guidance (FoodSafety.gov, “Cold Food Storage Chart” and “Leftovers and Food Safety”). *[Sal: add the exact page links on the site.]*
- Sal's own materials: the leftovers plan and “already in your classroom” pantry check in his King Kullen menu options (Education/TeachingWork/LessonPlans/education_teaching_facs_kingkullen_8thgrademenuoptions_2026_03.pdf).

Teacher notes

- If time runs short, cut the second sort in Step 2 and the landfill slide in Step 4. Never cut the two-hour rule; it is the one that keeps someone from getting sick after the Lesson 1.20 lab.
- Common mistake: students treat “best by” as “throw away by.” Say it three times: best by is about taste, not safety. Then say the exception: for raw meat, poultry, fish, and dairy, do not push past the date.
- The card most teams get wrong is potatoes (pantry or counter, not the fridge) and the open salsa (fridge once opened, pantry when sealed). Use those two in the debrief.
- The waste number lands harder when it is in dinners: \$520 a year is thirteen \$40 dinners.
- *[Sal: the FACS room fridge is the best teaching tool in the lesson. If it reads over 40 F, that is the lesson.]*