USDA Food and Nutrition Service
U.S. DEPARTMENT OF AGRICULTURE

Meal Preparation and Service

A research brief about school year 2022–2023

Key Takeaways

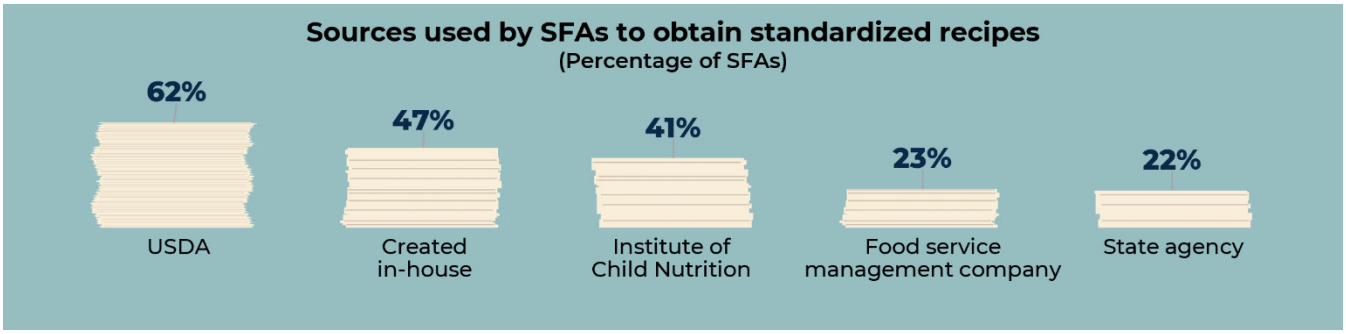
- The top sources of standardized recipes for most school food authorities (SFAs) were the U.S. Department of Agriculture, in-house recipes, and the Institute of Child Nutrition.
- SFAs asked for more training and resources about how recipes credit toward meal pattern requirements, developing seasonal menus, and other topics.
- More than 70 percent of SFAs used scratch cooking, speed-scratch cooking, or both at breakfast, lunch, or both meals. SFAs tended to use a combination of these methods at both meals.
- SFAs that did not use scratch or speed-scratch cooking cited several barriers to doing so, including the cost of labor and not having enough staff or time.
- At least once per week, 43 percent of SFAs offered a daily breakfast menu and 27 percent offered a daily lunch menu that did not include animal-based proteins.
- SFAs experienced a variety of challenges in making meal accommodations for students with disabilities, especially with substituting meal or food components and obtaining the necessary medical statements.

The U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS) administers the National School Lunch Program and School Breakfast Program to provide nutritious school meals to children. State agencies administer the school meal programs in each State and Territory through agreements with local school food authorities (SFAs).

SFAs are responsible for the school meal programs in one or more schools, so they are important sources of information about meal preparation and service. We asked a nationally representative group of 1,100 SFAs about the methods they used to prepare and serve meals during school year (SY) 2022–2023. The questions focused on (1) standardized recipes, (2) scratch and speed-scratch cooking, (3) protein variety, and (4) meal accommodations for students with disabilities.

Standardized recipes

Standardized recipes produce consistent results each time they are made. Predictable yields are important for school food service because SFAs must manage costs and ensure that school meals meet meal pattern requirements (Institute of Child Nutrition [ICN] 2022).[1]



Mathematica
Progress Together

In SY 2022–2023, SFAs obtained standardized recipes from a variety of outside sources, including the USDA (62 percent), the Child Nutrition Recipe Box from the Institute of Child Nutrition (ICN 2024)[2] (41 percent), their food service management company (23 percent), and their State agency (22 percent).

About half of SFAs developed their own standardized recipes. Most SFAs (70 percent) used the USDA Recipe Standardization Guide (ICN 2022)[1] and about half of the SFAs that used it thought it was somewhat or very helpful. We asked SFAs what other resources would help them develop standardized recipes. More than 20 percent of SFAs would find the following training or resource topics to be helpful: determining how recipes credit toward the meal pattern requirements (40 percent), developing seasonal menus and recipes (38 percent), conducting menu or nutrient analysis (32 percent), incorporating scratch cooking (32 percent), determining ingredient costs or price per serving for standardized recipes (27 percent), incorporating more local foods into recipes (21 percent), and customizing recipes to reflect cultural foodways (20 percent).

USDA Recipe Standardization Guide

The USDA Recipe Standardization Guide is a how-to guide for school nutrition staff who develop recipes. It is designed to be a complete source of information on recipe standardization, from recipe development to implementation (ICN 2022).[1]

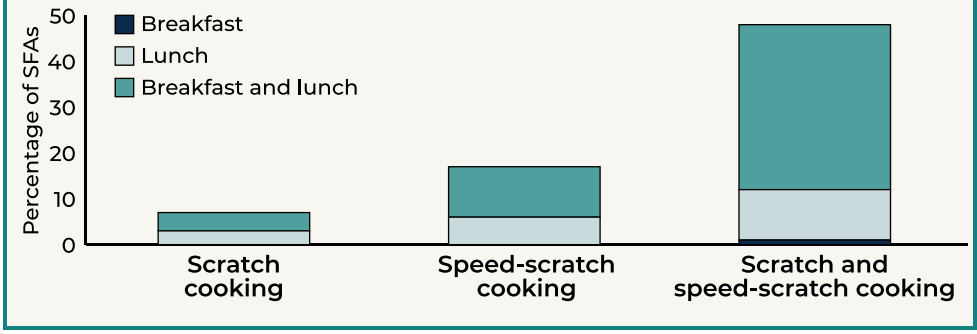
FNS developed this resource with the Institute of Child Nutrition, a center established by Congress at the University of Mississippi to support research, education and training, and technical assistance for child nutrition programs.

Most SFAs (55 percent) preferred online resources from USDA over paper copies. About one-third of SFAs had no preference on the format of these resources.

Scratch and speed-scratch cooking

Scratch cooking methods produce meal components from whole or minimally processed basic ingredients, often using a recipe (ICN 2023).[3] Speed-scratch cooking methods produce meal components using some processed ingredients in an otherwise scratch-based food preparation, such as preparing a pizza with premade pizza dough, shredded cheese, canned pizza sauce, and precut vegetables (ICN 2021).[4]

More than 70 percent of SFAs used at least some scratch cooking, speed-scratch cooking, or both methods at breakfast, lunch, or both meals. SFAs tended to use a combination of scratch and speed-scratch cooking methods and tended to use them at both breakfast and lunch.

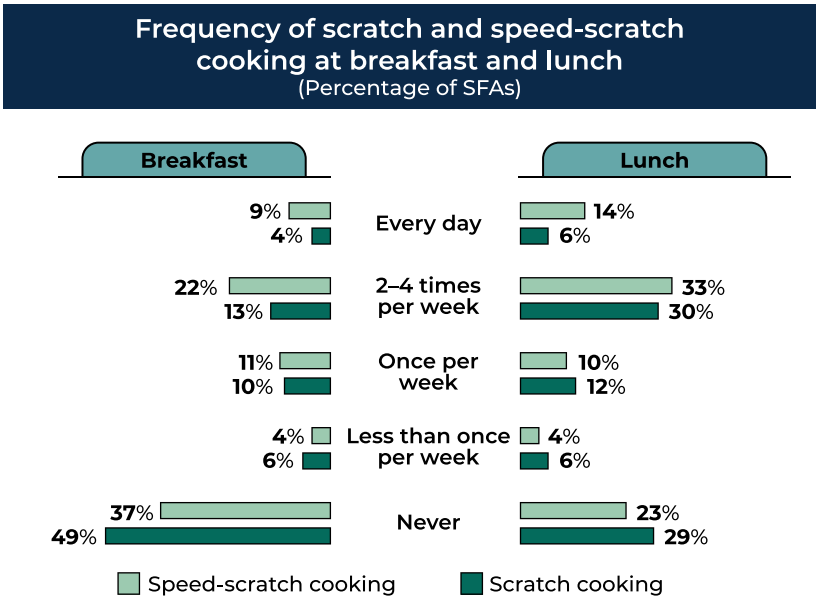


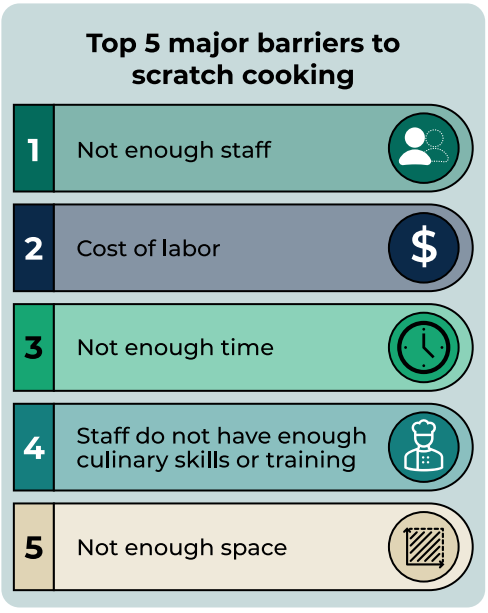
More than

70%

of SFAs used at least some scratch cooking, speed-scratch cooking, or both methods at breakfast, lunch, or both meals.

Among SFAs that used scratch or speed-scratch cooking methods, it was most common to do so two to four times per week at breakfast and at lunch. We asked the SFAs that did not use scratch or speed-scratch cooking methods to tell us what prevented them from using these methods more often. More than 20 percent of SFAs identified the following major barriers: not enough staff to cook from scratch (49 percent), cost of labor hours (46 percent), not enough time (41 percent), staff do not have enough culinary skills or training (28 percent), not enough space (27 percent), not enough large equipment such as refrigerators and ovens (25 percent), cost of foods (23 percent), concern about student acceptance of new recipes or menus (23 percent), and the need to change menu and nutrition analysis methods to ensure menus meet meal pattern requirements (21 percent).





Most of the SFAs that did not use scratch or speed-scratch cooking did not perceive the following challenges as barriers to using these cooking methods: lack of interest or resistance from school administration (76 percent), existing food or procurement contracts (70 percent), lack of small equipment (53 percent), concern about parent acceptance of new menus (53 percent), and the need to change oversight or monitoring methods (52 percent).

Protein variety

Schools may offer a selection of foods within the required meal patterns at breakfast and lunch to allow for student choice and encourage children to eat a variety of foods (7 CFR 210.10(k)).[5] One component of the school meal patterns is meats/meat alternates, which includes animal-based proteins like meat, poultry, fish, cheese, yogurt, and eggs, and plant-based proteins like soy yogurt, beans, peas, lentils, tofu, tempeh, nuts, seeds, and nut and seed butters (FNS 2024).[6] School breakfasts may and school lunches must include meats/meat alternates (7 CFR 220.8(c) and 7 CFR 210.10(c)).[7,8]

We asked SFAs how often they offered a daily breakfast and lunch menu that did not include any animal-based proteins in SY 2022–2023. At least once per week, 43 percent of SFAs offered a daily breakfast menu and 27 percent offered a daily lunch menu that was free from animal-based proteins.

Meal accommodations for students with disabilities

SFAs must ensure that students with disabilities (including those with food allergies) have equal access to the school meal programs (7 CFR 15b).[9] SFAs may need to modify program meals to accommodate students with disabilities. Modifications outside of the meal pattern require families to provide a medical statement (7 CFR 210.10(m)).[10] We asked SFAs about the biggest challenges they experienced in accommodating students

with disabilities, including those with food allergies. Nine percent of SFAs didn't experience challenges or didn't have students with disabilities who required accommodations, but more than 20 percent of SFAs shared the following challenges: meal or food component substitutions (51 percent), obtaining medical statements (49 percent), tracking individual student needs (29 percent), working with parents or guardians (28 percent), tracking ingredients (25 percent), and training staff (22 percent).

About the data reported here

This study was sponsored by USDA FNS. The information reported in this brief was collected from an online survey of a nationally representative sample of 1,100 SFAs that participated in the National School Lunch Program or the School Breakfast Program during SY 2022–2023. The data tables are available in Supplement B.4, and include some data broken down by SFA characteristic (size, poverty level, urbanicity).

Suggested citation

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Disclaimer

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References

1 Institute of Child Nutrition. "USDA Recipe Standardization Guide for Child Nutrition Programs." University of Mississippi, 2022. https://theicn.org/cicn/usda-recipe-standardization-guide-for-school-nutrition-programs/.

2 Institute of Child Nutrition. "Child Nutrition Recipe Box." 2024. https://theicn.org/cnrb/.

3 Institute of Child Nutrition. "CICN: Getting Started with Scratch Cooking in School Nutrition Programs." U.S. Department of Agriculture, 2023. Accessed July 25, 2025 at https://professsionalstandards.fns.usda.gov/content/cicn-getting-started-scratch-cooking-school-nutrition-programs.

4 Institute of Child Nutrition. "CICN: Speed-Scratch: Quick Preparations for High-Impact Menu Items." U.S. Department of Agriculture, 2021. Accessed July 25, 2025 at https://professionalstandards.fns.usda.gov/content/cicn-speed-scratch-quick-preparations-high-impact-menu-items-dec-2021.

5 National School Lunch Program. Meal choices at lunch. 7 CFR 210.10(k). Updated 2025. https://www.ecfr.gov/current/title-7/part-210#p-210.10(k).

6 Food and Nutrition Service. "Food Buying Guide for Child Nutrition Programs." 2024. https://foodbuyingguide.fns.usda.gov/FoodComponents/ResourceMeat,

7 School Breakfast Program. Meal requirements for breakfast. 7 CFR 220.8(c). Updated 2025. https://www.ecfr.gov/current/title-7/part-220#p-220.8(c).

8 National School Lunch Program. Meal requirements for lunches and requirements for afterschool snacks. 7 CFR 210.10(c). Updated 2025. https://www.ecfr.gov/current/title-7/part-210#p-210.10(c).

9 Nondiscrimination on the basis of handicap in programs or activities receiving federal financial assistance. 7 CFR 15b. Updated 2025. https://www.ecfr.gov/current/title-7/subtitle-A/part-15b.

10 Modifications and variations in reimbursable meals and afterschool snacks. 7 CFR 210.10(m). Updated 2025. https://www.ecfr.gov/current/title-7/subtitle-B/chapter-II/subchapter-A/part-210/subpart-C/section-210.10#p-210.10(m).